THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Open oil industry conference to consider program at Conference of Weights and Measures, Washington, D. C., June 3. Communicate with Dr. Anderson, American Petroleum Institute, 250 Park Ave., New York, N. Y. for meeting place.

Conference of Weights and Measures, Washington Hotel, Washington, D. C., June 4. (Grease measuring devices to be discussed).

Conference of state governors, federal oil board and oil operators on conservation, Broadmoor Hotel, Colorado Springs, Colo., June 10.

Independent Oil Men's Association of New England: Middletown, Conn., June 12; Wollaston, Mass., July 10; Fall River, Mass., Aug. 14; Providence, R. I., Sept. 11; Worcester, Mass., Oct. 9.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 13, 14.

North American Gasoline Tax Conference, Book-Cadillac Hotel, Detroit, Mich., Aug. 7, 8, and 9.

Independent Oil Men of America, Stevens Hotel, Chicago, Oct. 21, 22, 23.

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General

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—Photo by J. L. Rivkin

DR. E. R. LEDERER, who was elected president of the Natural Gasoline Association of America at Tulsa last week, is both a refiner and natural gasoline manufacturer. His viewpoint, like that of most of his predecessors, will be that of a blender or consumer as well as manufacturer. (See page 31 of this issue.)

Since he was made vice president of the Texas Pacific Coal & Oil Co. in charge of manufacturing, in 1925, Dr. Lederer has taken a keen interest in association activities. Last year he was chairman of the committee which arranges field meetings of plant operators to discuss operating conditions.

Dr. Lederer began his career as a refiner in 1904 with the Vacuum Oil Co. in Galicia and Roumania. Since then he has had charge of building and operating a number of refineries in the United States and Mexico. From 1922 to 1925 he served the Louisiana Oil Refining Corp. as vice president, building a cracking plant and a vacuum plant at Bossier City, La., and rebuilding the Gas Center refinery.

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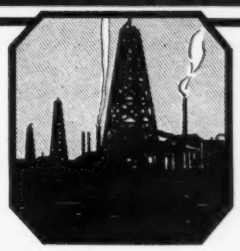

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Oil States Called to Discuss Compacts As Means for Conservation

By Roger B. Stafford
N. P. N. STAFF WRITER

NEW YORK, May 27

IN COLORADO SPRINGS, on June 10, will be held a conference of governors of oil producing states, or their representatives, the chairman of the Federal Oil Conservation Board, representatives of the American Petroleum Institute, and other members of the oil industry.

This conference has been called by President Hoover in the general interests of conservation of the nation's oil supply and specifically to discuss an interstate compact as a means for bringing about conservation.

Such a compact may be developed at that meeting, although Secretary of the Interior Wilbur, who is chairman of the federal oil board, says general principles will be discussed rather than a specific form of compact to create a board to regulate crude oil production in states that come into the plan.

Facts regarding overproduction in the last five years and deductions from those facts will be presented to the Colorado Springs conference by Mark L. Requa, whose activities the last ten years in relation to the oil industry have puzzled many in the industry. Mr. Requa said in April and has reiterated to NATIONAL PETROLEUM NEWS that he is acting only independently for conservation but may be sworn in before the Colorado Springs meeting.

In a telegram from Santa Barbara, Calif., where he is staying until he sets forth for Colorado Springs, he does not state for what he is to be sworn in. Secretary Wilbur, at Washington, said that the words "sworn in" as used by Mr. Requa meant that he probably would be commissioned as a special advisor to the federal oil board, thus giving him official standing.

Directors of the American Petroleum Institute are to meet May 28 in New York. From that meeting some tentative plan or policy is expected which will be presented or followed by the institute at the Colorado Springs conference.

The directors are expected to select May 28 the institute's representatives at the Colorado Springs meeting. It is probable that E. B. Reeser, president of the institute, W. R. Boyd Jr., executive vice-president; R. C. Holmes, chairman of the institute's General Committee on World Production and Consumption of Petroleum and Its Products; W. N. Davis, president of the Mid-Continent Oil and Gas Association, and other members of the General Committee will attend.

This general committee and the executive committee of the institute met jointly at the A.P.I. headquarters here May 21 to ascertain facts about interstate compacts. The meeting was held behind closed doors, but at its conclusion those who attended said no recommendations had been formulated to present to the directors of the institute.

IT WAS not until the day after this joint meeting that the White House announced that President Hoover, through Secretary Wilbur, had invited the governors to a Colorado Springs conference. Members of the institute said they had no inkling of the proposed conference until news of it came over a stock market ticker.

However, they had arranged an informal conference with the Federal Oil Conservation Board which was held behind closed doors in the office of Secretary Wilbur at Washington, May 23. It was not until after this conference, knowledge of which was to have been withheld from the press, that the oil industry was invited to attend the Colorado Springs meeting.

Secretary Wilbur in a formal statement and personally to NATIONAL

Authorship of Compact Form Disclosed

CLEVELAND, May 27.—The form of interstate compact published in the last issue of NATIONAL PETROLEUM NEWS was drafted by a young lawyer in the Interior Department at Washington, Secretary of the Interior Wilbur stated over the long distance telephone today.

Secretary Wilbur said a few copies had been passed out to interested persons as a sample of what a compact might be.

He said that four drafts of compacts had been submitted from different sources, but that no specific draft would be submitted to the Colorado Springs conference and that no effort would be made to insist on any form of compact. All four drafts were written by attorneys.

Secretary Wilbur stated that seven or eight governors had already accepted the invitation to the Colorado Springs conference. A conference program is being worked out, but probably will not be completed until the return to Washington of Dr. George Otis Smith.

PETROLEUM NEWS, said all persons who might have suggestions to offer for bringing out a definite plan of conservation of oil, would be given a hearing at Colorado Springs.

The meager news that has filtered out of the joint conference in New York May 21 and the informal conference with the Federal Oil Conservation Board in Washington, May 23, indicates that the institute committeemen are handling the compact suggestion quite gingerly for fear of burning their fingers.

No oil man admits that he is for a compact. Various compacts have been discussed and one hears reports that several forms of compacts to permit interstate control of oil field development have been drafted. Some of these have reached Secretary Wilbur but the authorship of them has not been pinned, so far, definitely on any one person.

After the May 21 conference in New York, it was announced that compacts had been discussed in it but that no conclusions were reached and no resolutions or motions offered. No committees were appointed, it was also said, and no further meetings would be held until the executive committee meets again on the morning of May 28, a few hours before the institute directors convene.

AN ATTEMPT was made to keep it secret that two days later members of both executive committee and the general committee on conservation were to meet with the federal board in Washington. Knowledge of that meeting did not get out until the next day in New York and the morning of the meeting in Washington.

Members of both the executive committee of the institute and the general conservation committee said the A.P.I. men were just seeking information at both the New York and Washington meetings.

Some oil company lawyers lately have been studying the subject of compacts. Among them are Judge C. B. Ames, vice-president of The Texas Corp., and J. A. Veasey, general counsel of the Carter Oil Co. Both men were present at both the New York and Washington meetings. They answered questions and explained how previous compacts had operated or were operating.

One member of the institute's conservation committee, speaking for himself, said:

"The institute will never admit there is a public interest in the oil industry. Therefore, it will never agree or submit to any compact such as has been published."

This reference was to a form of compact, which was published in NATIONAL PETROLEUM NEWS for May 22. This draft, the parentage of which has been disclaimed by Secretary Wilbur and members of the institute who are working on conservation, would make petroleum virtually a public utility and vest an interstate control board with unlimited legislative, administration and judicial authority.

In a discussion of the published compact draft, E. B. Reeser, president of the institute, said:

"The American Petroleum Institute is as much for conservation as it ever was and is willing to consider any plans anyone can devise. That is why we are considering the interstate compact idea. We are trying to get at the facts about compacts. The willingness of the industry to cooperate with the various state governments and the federal government is shown in its support of the California gas law."

To this statement, W. N. Davis, vice-president of the Phillips Petroleum Co., president of the Mid-Continent Oil and Gas Association, and a member of the institute's conservation committee added:

"The institute is willing to cooperate with anyone who believes he can work out a conservation plan. It will supply him with technical, statistical or other data it may have."

Early press dispatches about the Colorado Springs conference indicated that the oil industry would not be heard at that conference. However, Secretary Wilbur announced, following the secret conference May 23, that both the small Independents and the major producing companies would be given a chance to be heard. The secretary's announcement follows:

"The Federal Oil Conservation Board announcement that, in connection with the scheduled meeting at Colorado Springs of representatives of the governors of a number of oil producing states, a cordial invitation was sent out today to representatives of the Independent producers of oil, as well as to major companies, to attend and offer any suggestions which they may have concerning the elimination of waste and other conservation measures. The plan of the meeting is to discuss general principles rather than a specific interstate compact.

"THE Federal Oil Conservation Board has no specific form of compact in mind. It hopes that, out of the conference, some satisfactory plan may arise. The general principles are to promote uniformity of the conservation laws of the various oil producing states, provide against inequitable distribution of the burden of conservation among the states, and to provide stability of uniform provisions over a period of years.

"It is thought that flexibility to meet changing conditions could best be secured by some method which would entrust to an interstate conservation body certain regulatory functions. If there should be common agreement among certain of the states, then the plan would be to have further action depend upon the legislatures of the states and Congress."

Secretary Wilbur said the Washington meeting had been closed because the discussion of the compact idea was informal and that confusion might have arisen had the public and newspaper men been admitted. The conservation board previously had insisted on open hearings and Secretary Wilbur said his position in favor

Seven States Accept

WASHINGTON, May 28.—Seven governors have accepted the invitation of the government to attend the conference at Colorado Springs June 10—those of New Mexico, Kansas, Wyoming, California, Colorado, Oklahoma and Texas. Arkansas, Utah, Montana and Louisiana have sent no word as yet, the Interior Department announced today.

The American Petroleum Institute, Independent Oil Producers Association, Rocky Mountain Oil & Gas Association, California Oil & Gas Association and Oklahoma-Kansas division of the Mid-Continent Royalty Owners Association have signified their intention to send representatives.

Requa May Be Made Special Advisor

CLEVELAND, May 27

MARK L. REQUA, general director of the oil division of the Fuel Administration during the World War, probably will be commissioned a special advisor to the Federal Oil Conservation Board before the Colorado Springs conference June 10, Secretary of the Interior Wilbur said at Washington today.

Making Mr. Requa a special advisor would give him official standing at the conference, Dr. Wilbur explained. Mr. Requa has had no official standing but has been working in the interest of conservation entirely on his own initiative, Dr. Wilbur said he understood.

This expected appointment explains what Mr. Requa meant in a telegram to NATIONAL PETROLEUM NEWS (published on another page of this issue) that he "may be sworn in prior to the Colorado Springs conference."

of open meetings was well known. He did not say whether future meetings would be open or closed.

The conservation board and information bureau of the Interior Department would not give out a list of the oil men present. At least 16 were at the session. Those known to have been there were the four members of the federal board—Secretary Wilbur, Secretary of War Good, Secretary of the Navy Adams, and Secretary of Commerce Lamont—Assistant Secretary of the Interior Dixon; E. C. Finnie, solicitor for the interior department; E. S. Rochester, secretary of the federal oil board; Mr. Reeser, Mr. Holmes; W. R. Boyd Jr., executive vice-president of the institute; Fayette B. Dow, Washington counsel of the institute; Mr. Davis; Paul M. Gregg, general counsel, Union Oil Co. of California; Judge Ames, and Mr. Veasey.

THE invitation for the Colorado Springs conference was wired to the governors of Oklahoma, Texas, California, Wyoming, Utah, Colorado, Montana, Kansas and New Mexico.

Secretary Wilbur will attend as representative of the federal government. Dr. George Otis Smith, director of the United States Geological Survey and chairman of the federal oil board's technical advisory committee, will be present. Dr. Smith at present is in California working out petroleum conservation matters.

Mr. Requa, who at times has been reported as representative of President Hoover, and the A.P.I. in calling on governors of the leading oil producing states in behalf of the compact idea, will be there, of course. No one in the East can explain Mr. Requa's position. It is denied that he is an accredited representative of the A. P. I. although he is a director of that body. It is not believed that he represents the President, although he is a personal friend of the President.

Inquiries as to Mr. Requa's status usually lead back to the statement he issued April 27 before leaving Washington to call on the western governors. Mr. Requa in his telegram to NATIONAL PETROLEUM NEWS, published elsewhere in this issue, quotes from this statement.

The publication of one of the compact drafts has brought the compact idea more to public attention than anything else since the idea was first set before the oil industry almost three years ago.

First mention of the interstate compact idea as a possible means for accomplishing conservation of petroleum was made on page 24 of the first report of the Federal Oil Conservation Board in this sentence:

"There should be active cooperation between the oil producing states to the end that uniform laws may be enacted, or even agreements or compacts entered into between the states, subject to ratification by Congress."

That report was made Sept. 6, 1926. Little or nothing was heard after that until April 8, 1929, when Secretary Wilbur wrote Mr. Holmes suggesting an interstate compact. This letter was written after Attorney General Mitchell killed the proposal of an oil industry agreement to hold the 1929 crude oil production at the level of 1928 production.

Mr. Boyd, in an effort to propagate information about the interstate pact idea, had had reprinted the report of the Committee on Interstate Compacts which was presented to the National Conference of Commissioners on Uniform State Laws at Cincinnati in 1921.

In that report, a copy of which has been sent every member of the A.P.I., are listed all state compacts that had been entered into until 1921. The most important of the list is the Port Authority of New York which governs New York Harbor. There is no federal representative on the Port Authority. There is provision for such representation in the one draft of an oil compact that has gained prominence.

Authority for compacts among the states is given in a negative way in Article 1, Section 10 of the constitution of the United States. Clause 3 of that section reads, "No State shall, without the consent of Congress, . . . enter into any agreement or compact with another State or with a foreign power . . ."

Congress has given authority in the past for interstate boards to settle boundary lines, to protect rivers against fishing, and to conserve the forests on water sheds. It, however, has never been called upon to pass on a compact aiming at the conservation of a mineral resource. The suggested oil compact is unique, Secretary Wilbur told NATIONAL PETROLEUM NEWS.

The men who attended the conference May 21 in New York are: Mr. Reeser; Mr. Boyd; Amos L. Beaty, treasurer, American Petroleum Institute; Mr. Holmes; J. Howard Pew, president, Sun Oil Co.; W. M. Irish, president, Atlantic Refining Co.; Richard Airey, president, Asiatic Petroleum Co.; A. F. Corwin, vice-president, Standard Oil Co. of New York; F. R. Coates, vice-president, Henry L. Doherty & Co.; H. O. Caster, counsel, Henry L. Doherty & Co.

Judge Ames; E. R. Brown, president, Magnolia Petroleum Co.; C. F. Meyer, president, Standard Oil Co. of New York; Mr. Davis; A. E. Watts, vice-president, Sinclair Consolidated Oil Corp.; William Green, vice-president, Pan American Petroleum & Transport Co.; E. J. Sadler, president, Creole Petroleum Co. (Standard of New Jersey); A. J. Byles, president, Tide Water Associated Oil Co.; W. F. Humphreys, president, Associated Oil Co.; Paul M. Gregg, general counsel, Union Oil Co. of California.

Mr. Veasey; Henry M. Dawes, president, Pure Oil Co.; W. C. Franklin, vice-president, Tidal Oil Co., and W. S. Fitzpatrick, chairman, Prairie Oil & Gas Co.

Conference Intrigues Mid-Continent

TULSA, May 25.—While interest was high in the Mid-Continent in the coming conference at Colorado Springs, called by President Hoover to discuss an interstate conservation compact, official action by Oklahoma had not been taken as the week closed.

Gov. W. J. Holloway was expected to appoint his representatives soon. Reports from Oklahoma City were that he had been giving the matter some thought and had consulted some oil men and attorneys as to selection of delegates.

It was expected that the governor would name several representatives, probably five or six. It is not likely that he will attend the June 10 meeting himself, as the Oklahoma legislature is in session and the governor is occupied in attending to state business.

No details as to how the meeting will be conducted have been received here. Official notice was received from Secretary of the Interior Wilbur, chairman of the Federal Oil Conservation Board, that a meeting would be held. It was telegraphed to the Mid-Continent Oil and Gas Association and to the National Association of Independent Oil Producers, headed by W. H. Gray. The invitation sent by Secretary Wilbur read:

"A preliminary conference to discuss the general principle of oil conservation is to be held at the Broadmoor hotel, at Colorado Springs, beginning June 10. It is anticipated that representatives of the various states interested and the Federal Oil Conservation Board will be present. If officers of your organization care to present in writing, or in person, a constructive program concerning this subject, or the development of a state compact to bring about the elimination of waste in the oil industry, they will be welcome."

Requa Gives His Status as "Unattached" In Mission to Governors

Santa Barbara, Calif.
Warren Platt, Publisher,
NATIONAL PETROLEUM NEWS

Telegram received here where I shall be until the Colorado Springs conference. Propose then to present certain facts and suggest deductions therefrom.

Regardless of who suggested compact, it is a move in the right direction. As to compact authorship respectfully refer you to chairman of the federal oil board.

Replying categorically to questions concerning myself personally refer you to statement I issued at Washington April 27, in part:

"After conferring with Secretary Wilbur regarding the petroleum problem and in the light of my own activities during the past 10 years in urging conservation and cooperation within the industry I have advised the secretary that I shall endeavor to cooperate actively with both the government and the petroleum industry in helping so far as I can to make successful the proposal of Secretary Wilbur that a compact between the federal government and the states be worked out under which it will be possible to bring about the readjustments in the petroleum industry so necessary in behalf of the public welfare.

"I shall attempt just as I have attempted over the past 10 years to do all that I can from an engineering standpoint and from the standpoint of a private citizen to work for the presentation of a satisfactory and just plan. In a sense I may perhaps be said to be occupying a neutral position with the government upon one hand and the petroleum industry upon the other.

"In occupying this unattached position I shall feel free to speak frankly and fully to an extent that might perhaps not be possible if I were representing either the government or the industry. As a volunteer in the expression of my own opinion on a subject that has been uppermost in my mind since I resigned from the position of general director of the oil division in 1919, I shall alone be responsible for my views.

"The objective to be accomplished, of course, is the working out of a compact between some of the oil producing states and the federal government whereby a plan can be made effective that will be acceptable to the government, that will protect the interests of the public, and that will equally protect the interests of the petroleum industry.

"Such a plan, having the approval and cooperation of all concerned, should, it seems to me, be acceptable to the Congress and the state legislatures of the various states." I am not now nor have been since the war, a government official but possibly may be sworn in prior to Colorado Springs conference if Secretary of Interior desires. I am not employed by institute with or without pay. I am able to and am paying my own expenses.

For 10 years I have believed conservation and cooperation in the oil industry inevitable. I have tried to construe facts and present deductions.

I agree that oil industry can only attack problem by having all the facts which undoubtedly will be presented at Colorado Springs in orderly dispassionate manner.

I am sure the industry then will have full opportunity to present its views without experiencing any attempt at gag rule. That meeting is *not* for purpose of putting over prearranged slate but understand entirely for purpose considering ways and means of working out interstate compact that will eliminate obstacles familiar to everyone who has studied proceedings of the Federal Oil Conservation Board and of agreeing to a procedure to eliminate obstacles referred to.

This procedure now seems only possible under some form state compact. Refer you to Charles Evans Hughes' brief before Oil Conservation Board, report of Committee of Nine, and more recent suggestion of committee of the American Bar Association for reasons why compact seems most feasible procedure.

That conditions are unsatisfactory is the unanimous testimony of all parties participating in the investigations of the Federal Oil Conservation Board. Such being the case rational remedy is obviously necessary. This remedy Colorado Springs meeting should attempt find.

I believe it can and will succeed simply because success demands it in behalf of national safety and public welfare and best interests of the oil industry.

In conclusion, we have, for almost five years, had endless stream, both

N.P.N. Asks Requa for Credentials

CLEVELAND, May 25

ACCORDING to the best information we can get you seem to have been the author of the suggested form of state compact we printed in last week's issue and which caused great comment and protest in oil industry.

There has been so much mystery and deliberate secrecy thrown about this whole conservation subject by both A.P.I. directors and government which has been so misleading to the rest of the oil industry we think it is only fair to do all we can to clear it up. Therefore we ask, Did you write that suggested compact or have you written any compact which you have given to any men in or out of the oil industry?

Is it true that you represent either President Hoover, the Federal Conservation Board or the institute in your calls on various state officials? Are you employed by the institute with or without fee or are your expenses being paid by the institute or anyone else in this work that you now appear to be doing in regard to oil conservation?

We believe the oil industry can only properly attack this vital subject by having all the facts and all the negotiations of every kind whatsoever always entirely out in the open. Otherwise many prominent oil men feel that irreparable injury will be done the industry. Will you please wire answer by Monday afternoon?

(Signed) WARREN C. PLATT, Editor
NATIONAL PETROLEUM NEWS

legal and technical argument, endless speeches and meetings from which no curative action has come.

California conditions, so far as unnecessary drilling and oil and gas waste are concerned, are worse than ever. Recent legislative action here in passing gas conservation measure is a step in the right direction and undoubtedly will be stressed at Colorado Springs.

Meantime the industry should approach the meeting with conviction that the present national administration is gifted with common sense and engineering understanding.

I feel sure representatives of the federal government at the meeting are *not* going there instructed to attempt any fantastic schemes or to put over any impractical theories.

You know, as well as I, very definite unsatisfactory conditions that should be remedied and the stumbling block in the past has been the limitations of state and federal authority.

This meeting will, I assure, attempt in light of experience of last five years to find rational practical and economically sound program of cooperation and conservation that will make possible elimination of utterly unjustifiable practices with which the industry is confronted.

If the state compact is necessary to do this, assume it will be drafted. In any event there is no justification in any part of the industry for becoming hysterical. Unreasoning fear in past has been too much in evidence.

Don't you think it is about time to utilize experience of the past five years and draft a cooperative conservation program to make it possible to end obvious evils that everyone agrees exist and that have *not* been eliminated largely because of limitations of state and federal authority?

(Signed) M. L. Requa

Refiners Visit Ohio Standard Plants

By Paul Truesdell

N. P. N. STAFF WRITER

CLEVELAND, May 24

MORE than half a hundred members of the National Petroleum Association, the oldest organization of Independent refiners, were guests today of the Standard Oil Co. of Ohio in Cleveland.

They were told frankly just how the Standard refineries are operating, how much crude they are running, what their results and operating costs are. The distillation and cracking sides of the plants were described in a short lecture, illustrated with charts, by J. S. Harrison, vice-president of the company in charge of the manufacturing department.

Then the refiners of Pennsylvania crude were taken in buses to the company's two plants in Cleveland, shown the equipment in operation and under construction, and invited to ask questions. Many were asked, some involving yields, operating costs and costs of various items of equipment. All were answered with the utmost frankness.

"We have no secrets—nothing to hide," Mr. Harrison told them.

The refiners were entertained at luncheon at The Hollenden and the party broke up with an offer by Mr. Harrison to take any visitors who wished to go back to either of the refineries to enable them to get further detailed information on any phase of operations.

By veterans of the early days in the refining industry, both in the ranks of the Standard organization and of the Independent refiners, the occasion was regarded as marking an important milestone of progress toward a united oil industry.

They point out that Cleveland was the birthplace of the Standard Oil Co. and that the Standard of Ohio was the parent company of them all; also, that the chief purpose actuating the organization of the National Petroleum Association years ago was to present a united battlefront of Independent refiners against the Standard.

Not one of them could remember another occasion when a group of Independent refiners had ever been invited guests on a tour of inspection through a refinery of a Standard company. It was considered as more than likely that the plant inspections of yesterday, however, will be but the first of many visits to Standard refineries inasmuch as several of the old line Standard companies are now members of the National Petroleum Association.

These new members are the Standard of Ohio, Standard of New Jersey, Standard of New York, Standard of Kentucky, Solar Refining Co. and Ohio Oil Co.

Yesterday noon, Frank B. Fretter, president of the National Refining Co., one of the charter members of the National Petroleum Association and one of the most aggressive generals of the Independent refiners' forces in the old days, sat at the same table with four directors of the Standard of Ohio who were present to greet the guests. President W. T. Holliday of the Standard was absent, being on a trip in Europe.

These directors, besides Mr. Harrison, were Howard G. Jones, executive vice-president; A. M. Maxwell, vice-president in charge of sales and George A. Burke, lubricating oil expert.

The visit to the Standard refineries was the regular annual plant inspection that is held by the National Petroleum Association every spring. Last spring the plant visited was the Marcus Hook refinery of the Pure Oil Co. The preceding year it was the Petty's Island refinery of the Crew Levick Co.

At ten in the morning the guests assembled in the auditorium of the Standard Oil offices. The meeting was called to order by P. S. Tarbox, Independent Refining Co., Oil City, trustee in charge of the department of manufacture of the National Petroleum Association. He turned the meeting over to Mr. Harrison. The latter explained the operation of his company's distillation and cracking equipment. He stated that the company is now running at the Cleveland refinery 12,000 barrels a day (50-gallon barrels) of Mid-Continent crude delivered to it by pipe line.

Coking operations which were formerly part of the plant's operating schedule have been abandoned entirely. The crude now is run down to about an 18 per cent bottom, which is sold as fuel oil to industrial plants. Gasoline, various naphtha cuts, kerosene, gas oil and wax distillate are taken off in the crude distilling operations.

Mr. Harrison described and illustrated, by means of a chart, the construction and operation of the crude still battery equipped with bubble towers and heat exchange which was described in NATIONAL PETROLEUM NEWS, Sept. 19, 1928 issue, page 22.

The party was taken in buses to No. 1 works, which is the skimming and cracking refinery. The guests were split up into small parties, each in charge of a competent guide, and were conducted over the plant, special attention being given to the two cracking units that are operating and the two that are under construction.

No. 2 works was next visited. This is the lubricating oil plant of the company.

Following the luncheon which followed, each of the four Standard Oil directors said a few words of welcome. E. M. Lyons, president of the association responded, expressing the appreciation of the association for the hospitality extended by the hosts. He also asked the cost of the solid steel forged soaking drums used in the Tube and Tank cracking units and Mr. Harrison told him the cost is slightly more than $23,000 each.

Review of Late Production News

ANOTHER new high record in total new supply of crude on hand was established the week ended May 25 when it reached 3,071,207 barrels, or 55,000 barrels more than the previous high mark made in the week ended Feb. 9. Large increases in both domestic production and crude imports were responsible for this high figure.

Crude oil imports were at the rate of 380,857 barrels daily, or 102,286 barrels more than the daily rate of the previous week.

Domestic production increased 46,800 barrels, to 2,690,350 barrels daily average for the week ended May 25, according to the American Petroleum Institute.

The largest change in any individual field was a gain of 13,000 barrels in Santa Fe Springs. Other larger changes were all increases in these fields:

Pecos county, 9150 barrels; Mission pool 6800 barrels; Maud, 3150; Little River, 2250; Seminole, 2350 barrels; and Salt Creek, 2100 barrels.

California

PRORATION machinery in California is standing a severe test as new completions boost the field and state production totals to high levels.

State production figures showed an increase of approximately 20,000 barrels to make a total of 771,000 barrels, or a little more than it was two weeks ago. Shut in production is estimated to be about 75,000 barrels.

O'Connell zone producers at Santa Fe Springs have been a thorn in the side of proration officials. Of the nine wells completed in this field last week, eight are producing from the O'Connell sands an average of 5180 barrels per day. The Texas Co. brought in two wells, one for 11,800 barrels and another for 7870 barrels.

With completion dates nearing for 45 wells either drilling or preparing to cement in the O'Connell zone, interested operators will be asked to attend a meeting to discuss plans to hold production back as much as possible.

Conservative estimates place the production of the Santa Fe Springs field at about 180,000 barrels for the week ending May 25, from 331 wells.

Ventura Avenue production was up 3000 barrels to give a daily average of 59,000 barrels. Other California fields held their own, small declines in some being offset by slight increases in others.

Santa Barbara Mesa is in the eyes of California operators, as a result of a completion May 19 by Olympic Oil and Refining Co. The new well is on the outskirts of the city of Santa Barbara and opens up a large area extending north in the direction of Elwood, 25 miles away. Initial production from the wells was estimated to be about 1500 barrels but, for lack of adequate storage, it was necessary to kill it while tanks were being built.

Texas, New Mexico, Louisiana

A SHOW of 1,000,000 cubic feet of sweet gas found by the Southern Crude Oil Purchasing Co. in its No. 1 Allinson test, Sec. 41, G.H.&S.A. block K, has turned the attention of West Texas operators to the Sutton county area of the Edwards Plateau region. The gas was found at 4640-4645 feet in gray lime. There was no indication of oil. Sulfur gas and two bailers of oil were found at 3570 feet, but nothing further was developed at that level. Surface elevation is 2373 feet.

About 10 miles northwest of Fort Stockton, in Sec. 78, block "OW," Pecos county, Phillips Petroleum Co. pumped 215 barrels, initial production, from its No. 1 Courtney, or Pryor, discovery at 1345-1367 feet.

The Henderson & Dexter test, in 18-20S-34E, Lea county, New Mexico, developed water at 3612 feet, dealing a blow to prospects previously considered encouraging. It is standing 2000 feet of fluid in the hole, about 65 per cent water. Previously, the proportion of oil was considerably greater.

Except for Gulf Coastal wildcatting on salt dome prospects, Louisiana operations are largely confined to the extension of the Pine Island district, near Shreveport, where the D. C. Richardson Oil Co. recently completed a 130-barrel pumper on the Hunter estate. Standard Oil Co. of Louisiana is drilling four offsets to the Hunter well in 17-19-14, Caddo parish.

Oklahoma-Kansas

INSUFFICIENT time has elapsed for the crude oil price advance and the lifting of proration to have any effect on wildcat drilling activities in the Mid-Continent.

Asher, Oklahoma's newest boom, suffered a setback when the Simms Oil Co. No. 1 Alexander, two locations north of the discovery well, failed to pick up the Viola at the expected depth. This apparent failure does not help the chances of the wells drilling on the townsite to the north and west of the Simms' discovery.

Payne county, where the Reiter-Foster et al. No. 1 Watkins appeared last week as the potential opener of a new pool, is still without major production. When drilled in the well flowed for less than half an hour, after which more drilling failed to bring back the oil. The test, which was in a second Misener, is to be deepened to the Wilcox sand. Total depth at present is 4748 feet.

In Trego county, western Kansas, the Central Commercial Oil Co., has a wildcat which may develop into an important well. It is swabbing about 10 barrels an hour from the Gorham sand topped at 3960 and drilled to 3972 feet.

Wyoming, Montana

WATER has been encroaching all week into the Cody Petroleum Co.'s discovery well in the deep sands in Oregon Basin; it may be shut off with a bottom plug.

Rocky Mountain Oil & Gas Association is preparing for a meeting to be held May 29 previous to the meeting called by Secretary Wilbur at Colorado Springs for June 10.

More Practical Natural Gasoline Specifications Are Planned

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, May 24

THE natural gasoline branch of our industry laid plans to increase its service to its customers at the eighth annual convention of the Natural Gasoline Association of America held here May 21 to 23.

Revision of official specifications was discussed as a means of enabling the refining industry to buy its blending material with a greater knowledge of exactly what improvement the natural gasoline will effect when mixed with the refinery product.

The association members also heard a series of papers dealing with better manufacturing methods. Hazards of the industry were given attention, the records of past accidents being studied from the viewpoint of future prevention.

G. G. Oberfell of the research division of the Phillips Petroleum Co., reported to the manufacturers that the technical committee of the association has been wrestling with a new group of specifications for the past three months. He reported the progress which has been made thus far, and asked the industry and refiner customers to discuss what has been accomplished to date and make suggestions.

"The purpose of any specification is to define adequately the utility of the commodity to the greatest number of users," Mr. Oberfell said. "Consequently specifications should be drawn with the idea of providing the refiner with the best information regarding the use of natural gasoline for blending purposes.

"We are all aware that the present grades are totally inadequate to define the true value of natural gasoline. Only three of the present grades are active. These are Grades AA, BB and C. Of these, by far the greatest emphasis is placed on Grade AA."

Mr. Oberfell pointed out that grades marketed as AA are quite diverse in their properties. They range from 80 gravity with a 98 per cent recovery to 88 gravity with 90 per cent recovery. He showed that many valuable gasolines which refiners might prefer to present standard grades can be produced to the advantage of both buyer and seller.

The sub-committee of the technical committee has reached the conclusion that vapor pressure is of prime importance as a specification. It has thought that a method also must be devised of defining for the refiner the practical volatility of the product offered since essentially it is volatility that the refiner seeks to buy.

Following are the conclusions reached thus far by the committee:

"1. Vapor pressure is the most important single characteristic of natural gasoline and should be the dominant specification. Since the vapor pressures of motor fuels bear a close relation to their vapor-locking tendency it is essential for the refiner to know the vapor pressure of natural gasoline. Vapor pressure might be considered an intensity measure of volatility.

"2. Since vapor pressure might be due to a relatively small amount of very volatile constituents or a rela-

A group on the roof of the Mayo hotel during the gasoline convention. Seated, left to right, George L. Ratcliffe who was made vice president, H. A. Trower, retiring president, Dr. E. R. Lederer, president elect; and Frank Chase of the Lone Star Gas Co., who almost got in the picture. Standing immediately behind Mr. Trower and scratching his head is J. H. Satterwhite, president of the Natural Gasoline Supply Men's Association

Emby Kaye, general superintendent of the gasoline department of Skelly Oil Co., was elected one of the vice presidents of the Natural Gasoline Association of America

tively large amount of fairly stable constituents, it seems necessary to provide also a quantitative measure of volatility. The intermediate Engler boiling points, etc., of natural gasoline afford a quantitative measure of the volatility of the product. After a great deal of study the sub-committee has tentatively established the Engler percentage off at 100 F. (corrected for distillation loss) as the most satisfactory single intermediate boiling point for specification purposes. The functions of this specification are:

"(a) To move the product into a higher vapor pressure range when the quantitative volatility becomes so high as to cause the product to have high residual vapor pressure after ordinary handling losses either blended or unblended.

"(b) To move the product into a lower vapor pressure range when the quantitative volatility becomes so low as to cause the product to have low residual vapor pressures after ordinary handling losses either blended or unblended.

"3. The present specifications, namely gravity and distillation loss, bear only the most general relationship to the fundamental specifications now under consideration. Distillation loss has very little significance, while gravity bears a rough relationship to quantitative volatility.

"4. The specifications to be proposed by the sub-committee probably will assume the following form:

Grade 3 Reid vapor pressure at 100° F. in lbs. per. sq. in. absolute	22-26
Engler per cent off at 100° F. corrected for distillation loss	30-60

"If natural gasolines in this vapor pressure range have less than 30 per cent or more than 60 per cent off at 100 F. they shall be placed in Grade 2 and 4 respectively.

5. "Although it will be impossible to establish grades on the basis of the proposed fundamental specifications which will exactly coincide with existing grades, the sub-committee believes it will be possible to state which of the new grades most nearly corresponds with each of the old grades.

"6. Much thought has been given to the number of grades to be established. The sub-committee feels that five grades are necessary. During periods of overproduction of natural gasoline the less volatile grades will receive market emphasis, while in periods of underproduction the more volatile grades will be emphasized.

"7. The general application of sound engineering principles in the natural gasoline industry has resulted in two factors which have contributed chiefly to the obsolescence of the present grades. Those factors are:

"(a) Improved extraction efficiency and the widespread adoption of the oil absorption process. These tendencies have increased the pentane content of the butane-free base and at the same time have increased the quantities of butane available for inclusion in the finished natural gasoline.

"(b) Improved fractionation of the raw condensate. This tendency has made it possible to exclude dissolved gases from the finished products. This has meant further additions to the butane content of natural gasoline.

"The possibilities for further development of these two factors are by no means exhausted and this will be considered in the establishment of new grades.

"This matter of revising specifica-

D. E. Adams of the Texas Co., Wichita Falls; F. J. Linquist of the Coltexo Corp., La Force, Tex., and Ray E. Miller, secretary of the association

tions for natural gasoline is most vital to the industry. The economic phases are quite important. The present specifications place a barrier against unusually high volatility by means of the upper gravity limits. This upper gravity limit acts as a check on production although high gravity products are successful in finding markets.

"No revision of the present grades on the basis of fundamental specifications will be possible without a complete understanding of what natural gasoline is. It is the thought of your technical committee that if natural gasoline is graded according to specifications which directly denote its value to the refiner and which more or less reflect the cost of manufacture a desirable end will have been gained. Both the buyer and seller will know what the product is worth.

"Furthermore, by knowing the fundamental physical characteristics of natural gasoline, the user will be able to more intelligently purchase the commodity. Thus, it is to be expected that markets for natural gasoline will be extended by rational specifications."

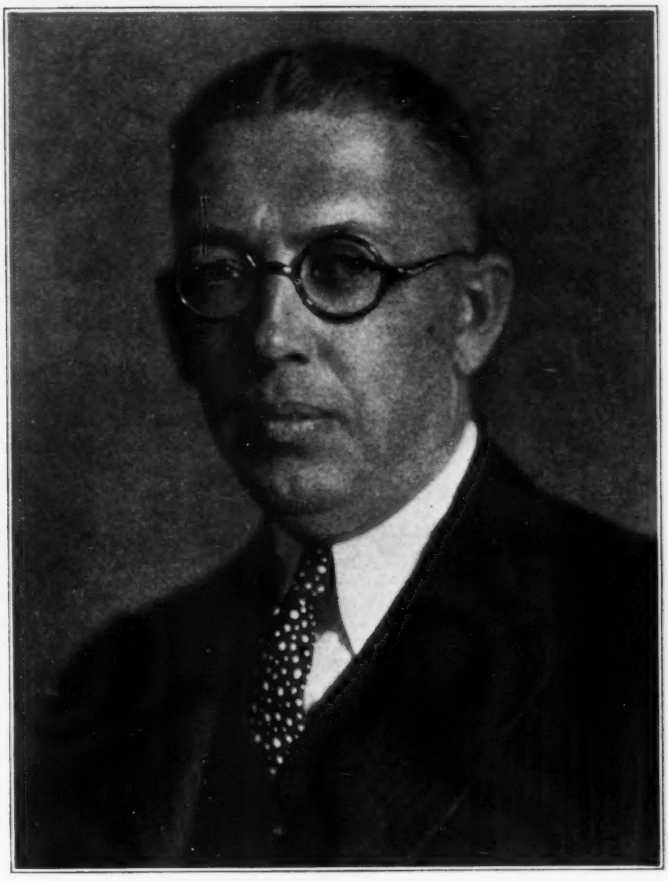
Discussion of the committee's progress report centered at first on the end point specification. Refiners attending the meeting, when asked for their opinion, suggested that a definite end point is highly desirable.

In general it was agreed that end point of motor gasoline is unimportant but refiners pointed out that the end point of natural gasoline has a marked effect on the intermediate boiling points of motor gasoline when blended. Discussion brought out the point that the end point of true natural gasoline is around 300 F. Inclusion of minute fractions of mineral seal oil which has a boiling point of 400 F. and above on the average cause rises in the natural gasoline end point.

Speaking for the committee Mr. Oberfell assured the refiners that their wishes would be met. He stressed the point that the chief reason for new specifications are to meet the needs of the refiners.

As to the method of conducting the distillation test and particularly the method of arriving at the end point it was general opinion that better definition is needed. Report was made that the American Society for Testing Materials now is working on this problem. With that in view it was agreed that the industry should wait for the refining industry to set up the standard method and then adopt that.

Refiners at the meeting indicated that there should be a limit on residue at the end point. Mr. Oberfell countered with the proposal that the natural gasoline industry would be willing to go as far as requiring that there be no residue at the end point.



No. 2—The president of the California Natural Gasoline Association was honored by the Natural Gasoline Association of America by being elected one of its vice presidents. He is George L. Ratcliffe, head of the natural gasoline department of the General Petroleum Corp., Los Angeles.

In the review of the committee work Mr. Oberfell reported that the Bureau of Explosives has approved the industry's suggestions as to vapor pressure limits by the Reid method for railroad transportation purposes. The suggestions now are before the Interstate Commerce Commission for approval.

Following are the recommendations:

1. The vapor pressure limits by the Reid method for Class 3 cars are 25 pounds per square inch absolute at 100 F. for summer and 33 pounds per square inch absolute for winter shipments.

2. The corresponding limits for Class 4 cars are 40 and 45 pounds per square inch absolute at 100 F. for summer and winter shipments respectively.

Importance of Effective Volatility Shown by Research Program

TULSA, May 24

THE importance of effective volatility of motor gasoline if it is to give satisfactory motor operation and the relative unimportance of the 90 per cent point were stressed by Dr. G. G. Brown of the University of Michigan, in his third annual report as director of research for the Natural Gasoline Association. The report and discussion on it occupied one full day of the convention.

Effective volatility is defined by Dr. Brown as the quotient obtained by dividing the per cent by weight of fuel in the mixture delivered to the motor cylinders by the per cent of fuel in the mixture supplied to the carburetor. In other words it is the amount of fuel which actually reaches the combustion chamber in a form suitable for burning.

Much of the work done by Dr. Brown in the past year has been on the relation of effective volatility to motor performance.

The California delegation to the natural gasoline convention. Standing, left to right: J. W. Reed, Cooper-Bessemer Corp.; J. S. Watson, Shell Co. of Calif.; E. L. Tobias, The Norwalk Co. Seated: J. A. Campbell, J. A. Campbell Co.; George L. Ratcliffe, General Petroleum Corp.; D. M. Wolff, Standard Gasoline Co.; W. W. Robinson, Jr., Texas Co.; Ben Dumm, Cooper-Bessemer Corp.; and L. V. Cassaday, Lomita Gasoline Co.

If a motor is to be operated with the use of a choke the fuel must have at least an effective volatility of 40 per cent, he said. If it is to be operated satisfactorily without resorting to the choke the effective volatility of the fuel must be at least 60 per cent.

The 10 per cent point on the A.S.T.M. distillation curve determines the minimum mixture temperature at which the car may be operated in a reasonably satisfactory manner with the choke. The 55 per cent point indicates the minimum temperature of the mixture at which the car can be operated satisfactorily without using the choke.

Dr. Brown presented a chart to the manufacturers showing minimum distillation points on the A.S.T.M. curve for various atmospheric temperatures which will give satisfactory motor performance. By use of the chart it will be possible to design fuels to fit any temperature conditions.

Pointing out that the average car is adjusted to deliver a 12 to 1 air-fuel ratio at the lower end of the manifold, Dr. Brown showed that effective volatility must be not less than 60 per cent in order to deliver a mixture not leaner than 20 to 1 to the cylinders. Of course with the use of the choke the mixture may be enriched above 20 to 1 without changing the effective volatility.

Most modern cars now are equipped with accelerating wells. These serve to inject additional fuel into the manifold when the throttle is opened suddenly. Assuming the carburetor is adjusted to supply a normal mixture of 12 to 1, the well will supply an 8 to 1 mixture at the moment of acceleration.

Taking the accelerating wells into consideration Dr. Brown found that an effective volatility of 45 per cent will just allow a motor to be operated if the 8 to 1 mixture is supplied in the accelerating period. Performance would be quite unsatisfactory with such a fuel, however, unless the choke was used.

The 10 per cent point on the A.S.T.M. curve is the most important single point of the distillation, Dr. Brown asserted. This is because it indicates the minimum temperature at which the car may be started and driven by use of the choke.

The 35 per cent point was stated to be the next most important. It indicates the temperature of 55 per cent effective volatility or about the mixture temperature at which most drivers are content to operate without using the choke.

The 55 or 60 per cent point indicates the minimum mixture temperature at which the motor may be driven in an entirely satisfactory manner when the motor is warmed up or in summer.

Dr. Brown asserted that the importance of fuel characteristics on crank case dilution has been overstated, as far as the modern car is concerned. If any commercial fuel is satisfactory, any other commercial fuel will be satisfactory under similar conditions of use.

The importance of the 90 per cent point on the A.S.T.M. distillation was minimized. Dr. Brown stated that motor car manufacturers now say that 20 per cent dilution of crankcase oil is desirable under winter conditions and that a 50 per cent dilution will not be harmful. In contrast with this Dr. Brown referred to the recent government discussions regarding the 90 per cent point which was sought to be lowered on the theory that 15 per cent dilution might otherwise be caused.

Discussing the vapor lock, Dr. Brown said that proper design of the fuel system of a car so that gasoline will not be heated to too high a point is most important. Some new cars brought out have gone back to allowing the fuel line to follow the exhaust closely, making an old mistake.

Pressure feed systems are less likely to be bothered by vapor lock than vacuum systems, Dr. Brown reported. He told of a new fuel pump now being offered for which the manufacturers claim efficiency 100 degrees higher than other systems.

THE study of natural gasoline stocks and their relation to the market for this product, presented by H. C. Charles, of the Phillips Petroleum Co., at the convention of the Natural Gasoline Association, and discussed in the accompanying pages, will be published in full in next week's issue of NATIONAL PETROLEUM NEWS.

A. J. Schlosser, general superintendent of the gasoline department of the Barnsdall Oil Co., was elected a vice president of the Natural Gasoline Association

Dr. Brown reported on deviations from Raoult's law which have been studied under a fellowship being maintained at the University of Michigan by the Chestnut & Smith Corp.

At the final session of the convention a great deal of discussion resulted from an exhaustive paper on the application of fundamental analysis to absorption tower operation. The paper was prepared by W. W. Robinson, Jr. of The Texas Co., P. S. Magruder of the General Petroleum Corp., J. C. Burks of the O. C. Field Gasoline Co., and E. R. Cox of the Texas Co. The paper was presented by Mr. Robinson.

Fluctuations in Price and Demand Minimized Through Storage

TULSA, May 24

AS a means of avoiding recurring shortages natural gasoline manufacturers discussed the building of more adequate storage facilities at their convention in Tulsa this week. An entire morning was consumed by discussion of the desirability of greater storage capacity and of practical storage building equipment and methods.

H. C. Charles of the Phillips Petroleum Co., presented a study of the problem from an economic standpoint in a paper which is reproduced elsewhere in this issue. His study led him to the conclusion that violent market fluctuations would be flattened out if the industry should provide itself with more storage.

General discussion of the paper brought out the view that demand for the product itself would be better if the violent market swings might be avoided. When natural gasoline prices exceed the price of motor gasoline refiners curtail their use of the product. They stay out of the market until the price falls and, in many cases, long after the market is down to a point where the blending material might be used at a profit.

If natural gasoline prices might be kept on a more stable basis it was considered probable that total consumption of the product would be greater than under current conditions.

A. F. Wood, sales manager for the Chestnut & Smith Corp., led discussion of the adequacy of storage facilities. He took the view that provision of more storage might not be entirely effective. He estimated that 60 per cent of the natural gasoline output of the Mid-Continent is shipped for export and pointed out the influence of that market.

Whereas the suggestion had been made that U. S. Motor prices should be an index to the desirable market level for natural gasolines, Mr. Wood suggested that the export market might be important. The law of supply and demand, he thought, might operate directly on naturals and not entirely through U. S. Motor.

The point was made that manufacturers might not benefit themselves much by more storage but might hold their product too long as they do now and be forced to sell on a falling market.

From an engineering standpoint, storage building practice was discussed by G. M. Davidson of the Empire Oil & Refining Co. His paper was published in the May 22 issue of NATIONAL PETROLEUM NEWS.

In his discussion of the subject following the formal paper, A. J. Schlosser of the Barnsdall Oil Co., reported that he is preparing an 80,000-barrel tank to use for storing a fully stabilized natural gasoline.

R. B. High of the Shell Petroleum Corp. refinery at New Orleans, reported that his company utilized large storage tanks for stabilized gasoline pending the time for its shipment by tanker. The product there is rectified to a point where its vapor pressure does not exceed atmosphere at normal temperatures. The tanks are kept under a slight pressure, about 2 ounces, and vapors collected by a recovery system.

Mr. Schlosser reported that tanks which have contained an off-color or off-doctor product may contaminate sweet or water white gasoline which might be pumped in subsequently.

S. S. Smith of the Shell Petroleum Corp., told the manufacturers that the frost line in Oklahoma now and then goes much deeper than normal. He suggested that underground lines from storage tanks be equipped with expansion joints to avoid possible freezing and breakage. Last winter a fire at one plant was caused by moisture in lines which were buried below the normal frost line but not deep enough.

Use of a frangible disk in California to offer relief to gasoline storage tanks was described by J. A. Campbell. The diaphragm is of cast aluminum and connects to a line which vents at some distance from the storage. He reported the use of water spray nozzles for keeping tanks cool in case of an adjacent fire.

Part of the Shell Petroleum Corp. delegates to the natural gasoline convention. Back row, left to right: L. Lamar, Paul Ryan, R. B. High, Frank Cutting, J. H. Forshee, Frank Hegwer, S. W. Craig, Shade Young and Bob Dollins. Lower row: Elmer Haines, F. B. Mack, S. S. Smith, J. S. Watson, Sam Hansard, Norris Plank, and E. Dickey

H. H. Hall, general manager, the Henderson Co. caught while resting

M. E. Foster, recently elected sales manager of the Phillips Petroleum Co., and Dr. G. G. Brown of the University of Michigan, director of research for the Natural Gasoline Association

W. N. Corbette, Eagle Picher Lead Co., Henryetta

Repressuring Helps Natural Gasoline Recovery as Well as Crude Output

By E. O. Bennett*

(Read before Natural Gasoline Association of America, Tulsa, May 21-23)

OIL is caused to move to wells drilled into a producing formation only by the utilization of the energy available in the formation. In the producing formations encountered the energy may be present in three forms.

(1) Potential energy due to the force of gravity.

(2) Energy due to hydrostatic pressure from a water source.

(3) Potential energy due to gas under pressure in solution and in contact with the oil.

The first source of energy is present in certain types of structures and assists in drainage where the second and third forms are not present. While gravitation drainage will help to recover some oil, it is of but little importance and can be practically neglected owing to the fact that the resistance to flow is high, on account of porosity and permeability. Where production is acquired by gravity drainage alone, it is generally small and beyond economic limits.

Production obtained by the action of hydrostatic pressure is of major importance and exists in a large percentage of the producing areas in the United States. So far but little work has been done in repressuring where water furnishes the principal motive power for the moving of oil.

Practically all subsurface accumulations of oil exist under pressure conditions of considerable magnitude. Generally the greater the depth, the greater the pressure existing, averaging about 33.8 pounds per 100 feet.

The natural gasoline industry is primarily concerned with those structures that produce oil primarily motivated by energy contained in gas under pressure.

Up to a few very recent projects the majority of all repressuring operations were conducted upon old and practically depleted properties where gasoline producers were but little concerned. Work done in repressuring depleted fields showed very clearly that where energy from external sources could be injected into structures, that useful results would be accomplished.

The useful results being in the form of increased oil recovered. Results thus obtained caused the petroleum engineer to go a step further in working out ways and means of conserving available energy on flush fields, so that today the practice is coming into general use.

On the basis that gas energy is all important in the recovery of oil, engineers and operators are now trying to determine the best way to utilize the energy in producing formations.

Two main points which will affect oil and gasoline recovery in this regard are:

(1) Production should be handled in such a manner that the least possible amount of gas energy per barrel delivered is used.

(2) All available gas produced with the oil should be returned to the formation producing it as soon as possible after it is produced and should not be sold for fuel if it can be returned for oil recovery purposes.

The principal manner of producing oil with a minimum amount of gas energy per barrel is by determining the proper production rate for each well by experimentation and observation. Gas production along with oil is chiefly governed by pressure differential between the well bore and the producing formation. This is commonly called back pressure. Where the differential pressure is kept to a minimum, the maximum amount of gas will be retained in the oil and formation, and many beneficial results will be obtained.

Keeping gas in solution by maintaining high pressures maintains the viscosity and surface tension of the oil at a minimum and as near its original state as possible. Viscosity is the principal factor offering resistance to the flow of oil through porous formations. Where the viscosity is kept to a minimum value, less energy will be required to produce a barrel of oil than will be necessary where gas is allowed to escape without doing work.

BEECHER and Parkhurst say "Viscosity is the most important physical characteristic of crude which affects the rate of flow through small irregular openings of a sand. The quantity of oil that will flow through openings is inversely proportional to the viscosity, other conditions remaining constant, while the pressure required to produce a given flow varies directly as the viscosity. For example, if the viscosity of the oil should be reduced 50 per cent, twice as much would flow through the sands if other conditions remain constant, or one-half of the pressure would be required to force an equal amount through the sand."

Repressuring old and depleted fields has returned big profits on money invested for this purpose. Recent pressure maintenance operations on flush and semi-flush production have proven

*Chief Engineer, Marland companies.

E. R. Lederer Heads Gasoline Ass'n

TULSA, May 24.—E. R. Lederer, vice president of the Texas Pacific Coal & Oil Co., Fort Worth, was elected president of the Natural Gasoline Association at its eighth convention. He succeeds H. A. Trower of the Phillips Petroleum Co., who has headed the organization for the past two years.

Emby Kaye, general superintendent of the gasoline department, Skelly Oil Co.; A. J. Schlosser, head of the gasoline department of the Barnsdall Oil Co., both of Tulsa; and George L. Ratcliffe head of the natural gasoline department of the General Petroleum Corp., Los Angeles, were elected vice presidents. Mr. Ratcliffe is president of the California Natural Gasoline Association.

Ray E. Miller was reelected secretary and treasurer by the board of directors at a meeting following the convention.

The following companies were selected for representation on the board of directors for a two year term. Each company is asked to name some official to serve on the board:

Texas Pacific Coal & Oil Co., General Petroleum Corp., Chestnut & Smith Corp., Lone Star Gas Co., Shaffer Oil & Refining Co., Empire Oil & Refining Co., Barnsdall Oil Co., Prairie Oil & Gas Co., Marland Refining Co., Shell Petroleum Corp., Carter Oil Co., Victor Gasoline Co., and Forrest E. Gilmore Co.

equally profitable and have substantiated the value of immediate work on returning gas to a producing formation. Ultimate yields of from 50 to 100 per cent more than those normally recovered, may be expected if proper applications are made.

The effect of repressuring and maintenance operations, on the natural gasoline business will be to stabilize the market and eliminate the large volumes of the product with flush production and a shortage with declining oil production.

THE maximum ultimate economic recovery of petroleum products, including natural gasoline, will be recovered when:

(1) As much gas as produced is returned to the formation without extracting the gasoline content it carries until production obtained under this program is carried to its economic limit.

(2) After production is no longer economical, gas can be circulated and the gasoline recovered until such time that no more can be economically taken from the formation.

(3) When dry gas injected returns to the surface dry, there are no more recoverable products except gas, unless mining is resorted to.

(4) Withdraw the gas and use it for fuel.

To do these things will mean that there will be no gasoline plants built and operated in flush fields. Compression plants taking gas from high pressure traps will be used for returning wet gas to the formation. Drip gasoline recovered in this process should be injected into key or input wells to assist in washing crude oil from the grains of the structure. Pressures as high as 1500 to 2000 pounds per square inch may be required but there are no mechanical difficulties involved in high pressure work. Installations in California have already shown the advisability of using pressures up to 1800 pounds per square inch.

After the injection period at high pressure has passed, the compressors can be fitted for circulating gas in the oil bearing formation for the recovery of gasoline vapors. During this stage of operations, dry gas is necessary and absorbers should be used in conjunction with the compressors.

When this type of program is followed, gasoline plant operations will not interfere with production methods and vice versa, as is often the case where best results to each are required without regard to the total ultimate recovery.

Returning gas to the structure in the time of flush production will not overcrowd the gasoline market and residue gas market as has been the case in many instances. A conservative use of gas would prevent great quantities from being wastefully consumed in the manufacture of carbon black, as now practiced and would require the development of more efficient means for the manufacture of this commodity.

The return of gas to the formation would make enormous quantities of gas now wasted, available for efficient use in ultimate recovery. It would spread the period of gasoline recovery over a wider range and call for less investment in gasoline equipment and less idle gasoline plant equipment as always appears after the flush is off a field.

It is realized that there will probably be more gas available in flush production than can always be returned. Where this condition exists the use of gasoline plants for stripping the gas before selling as residue, is a conservative operation. For greatest ultimate economy, however, this method will not be used as much as it has in the past.

One of the main reasons why repressuring of flush fields has not come into general use, is on account of the natural gasoline situation as it exists today, it being customary to use all available gas for gasoline extraction.

When gas is consumed for gasoline recovery and then burned to carbon black or sold as residue, there soon becomes a shortage and both the oil producer and the gasoline producer are forced to quit operations prematurely and uneconomically leaving unrecoverable many thousands of dollars worth of oil and gasoline that could otherwise be recovered.

The value of maintaining pressure on flush operations is shown by a few installations where all available gas is returned to the sand wet. In some instances consideration is being given to the advisability of burning crude for fuel to have more gas for returning to the formation. The use of wet gas has a decided value over dry residue in its scrubbing action on releasing oil from sand grains. One can readily see the advantage of using wet gas when it is shown that the oil in the surface of the sand is much greater than that in the pore space.

Where gasoline plants are in operation and the residue is returned to the formation, longer life to both production operations and gasoline plant operations is assured and a much greater return to both will be obtained than where residue is blown to waste, sold as fuel or burned to carbon black.

There are a great many producing operations today where gasoline plants are operating in conjunction that would be greatly benefited if the gasoline plant were operated as a link in the repressuring or pressure maintenance cycle. There are too many gasoline plants operated for gasoline alone, without any regard whatsoever for the ultimate production of oil from the wells to which they are connected. Any system of operation which will increase the ultimate recovery of oil will also increase the ultimate recovery of gasoline and if generally practiced would produce gasoline with a stable market resulting in better values.

THE total cost of pressure maintenance can be lowered when worked in conjunction with gasoline plants, as well as lower the cost of gasoline production.

Where gasoline is being extracted in the pressure maintenance or repressuring cycle, the lighter fractions of the gasoline, ordinarily weathered can be returned and are very bene-

Supply Men Furnish All The Fun for N.G.A.

TULSA, May 24.—The Natural Gasoline Supply Men's Association, furnished its usual daily entertainment during the annual convention of the Natural Gasoline Association. Luncheons were served to all those registered at the convention each noon.

On the first evening of the convention the supply men entertained the manufacturers with a smoker and vaudeville performance in the crystal ballroom of the Mayo hotel. A number of boxing bouts, singing and dancing sketches filled the program. D. E. Buchanan of the Chestnut & Smith Corp., was master of ceremonies.

On the final evening of the convention the supply men entertained the manufacturers and their wives with a dance at the hotel.

At their annual meeting the supply men changed their fiscal year to coincide with the calendar year. In the past the year has been concluded at the time of the gasoline convention.

New directors elected at the meeting were: E. W. Howe, Atlas Supply Co.; A. J. Kerr, Pittsburgh Equitable Meter Co.; M. H. Kotzebue, Tulsa Boiler & Machine Co.; and J. B. McMahon, Foxboro Co.

Hold-over directors are J. H. Satterwhite, Westcott & Greis; W. B. (Bill) Cummings, Clark Bros. Co.; W. A. Schlueter, Refiner's Supply Co.; M. F. Waters, Smith Separator Co.

Dr. E. R. Lederer, as president of the gasoline association, becomes an ex-officio member of the board.

Mr. Satterwhite continues in office as president until the end of the year.

ficial for washing oil from the sand when injected into pressure wells.

Operating gasoline plants in connection with repressuring operations is beneficial in that it is not necessary to pull vacuum on wells to recover the gas. Vacuum sufficiently applied is detrimental to wells and machinery for maintaining vacuum is more expensive than that for maintaining pressure for a given volume. Generally enough pressure will be maintained to force the gas to the plant without injury to the repressuring operation.

The gravity of oil produced under a pressure maintenance without the extraction of gasoline is generally increased from one to three degrees, thereby giving an added value to the oil. The return of the gas in some cases is actually worth more in increased gravity than if used for gasoline extraction.

*"Dry gas is injected into depleted oil sands in the Coalinga and Buena Vista hills oil fields in California to recover gasoline from unrecoverable oil which adheres to the sand grains. As operations in both fields are practically identical, only the Coalinga project will be described.

"At Coalinga, dry gas is injected into the oil sand on one property through a single well at an average pressure of 40 pounds per square inch, and returns to the surface through surrounding pumping wells. Approximately one gallon of gasoline per 1000 cubic feet of gas circulated through the oil formation is recoverable when the "wet" gas is treated in a nearby gasoline plant.

"The fluid levels in the wells on this property stand far below the top of the productive sand stratum, so that there is opportunity for the injected gas to travel through the upper depleted part of the sand zone. Oil production comes from the lower and less depleted part of the zone and is unaffected by the gas that by passes through the more depleted sand above the oil level.

"OIL production, therefore, has not been increased by the circulation of dry gas. However, if enough gas were available to fill the voids in the sand completely, and if pressure were built up over the whole structure, it is probable that the oil production would be increased.

"Circulating dry gas through depleted oil sands is usually profitable. Seldom will the cost of compressing and injecting gas into such formations exceed a few cents per 1000 cubic feet. On the other hand, the value of the gasoline recovered is several times the cost of manufacturing it, so that the resulting profit makes such operations lucrative; at the same time, the oil operator increases his supply of gasoline without affecting his reserves, because gasoline absorbed from unrecoverable oil otherwise would be lost."

The method of operation described above is one which is but little practiced, but which could be used in many partly depleted fields for an economic gain by the natural gasoline industry. If residue gas, now generally sold, were recirculated for increasing gasoline recovery, many of the gasoline plants would occupy more permanent positions, with protected investments and would be less dependent upon the production status of oil operations. In no case will oil operations be injured and in many the ultimate yields will be increased.

Where the gasoline content recovered by 1000 feet of dry gas circulated is equal to the market value of the gas for residue, it does not take much calculation to see where the gas should be used. Once sold for fuel, it is gone, never to be replaced. When used on a recycling program it can be used many times over, each time producing its original value in gasoline recovered and at the end of such a program it will have its original or higher value for fuel on account of a stabilized gas market, if such practices were generally resorted to.

The conservation of natural gas in the production of oil is of paramount importance. It is conservatively estimated that in a single year gas conservation would result in the production of many millions of barrels of oil, in addition to that nominally recovered.

If the gas ordinarily produced and consumed or wasted was used for pressure control, pressure maintenance and repressuring many millions of dollars of oil would have been realized that now remain unproduced and largely irrecoverable because of uncontrolled production methods.

IN ADDITION to a great many of the wells would have flowed naturally for a longer period under pressure control and increased production with a lowered lifting cost, would result leaving a greater profit per barrel produced, although the gas produced with the oil in excess of the estimated amount required to produce oil, efficiently has a value of several million dollars at the casing head it would have had a far greater value if used for expulsive energy in moving oil through the sand to the wells.

From this, it can be readily seen that if repressuring activities had been in use extensively in the past, the gasoline industry would have derived a great amount of benefit and many plants shut down after the flush production was over would yet be operating economically.

Summary of Conclusions

1. The natural gasoline industry will be greatly benefited by repressuring and pressure maintenance.

2. Gasoline plant operations fit in with repressuring operations and can help the ultimate recovery of each.

3. Gasoline plant operations maintained without regard to oil production, may be detrimental to both the gasoline plant and oil production.

4. Cooperative operation of gasoline plants and repressuring programs has worked successfully and greatly subsidized operations.

5. Repressuring in connection with gasoline production will tend to stabilize the gasoline market.

6. Repressuring in connection with gasoline production will minimize initial equipment cost in gasoline plants and keep operating charges low.

7. Unified operation over large areas is conducive to best results but good results can be obtained on a smaller scale.

8. Repressuring and pressure maintenance is a move towards conservation in the production of oil and anything which assists in helping in oil production is a corresponding help in gasoline operations.

9. Close cooperation between gasoline plant operation and production operations will be highly beneficial to each and pay good returns.

10. After both gasoline and production practices have been carried to economic depletion, the natural gas industry will then derive full benefit from residue gas left and their investments in transmission lines will be protected.

*Function of Natural Gas in the Production of Oil—U.S.B.M. & A.P.I. May, 1929.

New Barnsdall Office

TULSA, May 25.—R. P. (Bob) Brewer, formerly in charge of Barnsdall Oil Co.'s Wichita, Kansas, land department, has been transferred in charge of the land department at San Antonio, where Barnsdall is opening a new office. He will be succeeded as land man in Wichita by L. G. Stubbs, present scout. To do the scouting, B. B. Bramley will be transferred from the Seminole district.

Mr. Brewer was recently elected president of the Mid-Continent Oil Scouts and Land Mens' Association. It is likely that he will be succeeded in that office by Ralph Walkingstick, scout in the Seminole district for the Tidal Oil Co., the first vice-president.

Way Paved for Merger of Scouts Into National Association

By Paul Wagner
N. P. N. STAFF WRITER

FORT WORTH, May 23

THE way was paved at the sixth annual convention of the National Oil Scouts Association of America, in Fort Worth, May 21, for its merger with the Mid-Continent Oil Scouts and Land Men's Association, a similar organization serving the Mid-Continent states of Oklahoma and Kansas.

When final details of the merger have been effected, under changes made in the constitution at Fort Worth, the national oil scouts will become in fact what they already were in name—a national organization.

Membership in the national oil scouts organization had been largely confined to the states of Texas, Louisiana and Arkansas. Scouts from other territories will be invited to join, bringing together any separately organized associations of the present or future.

National oil scouts, who had previously accorded associate members full voting privileges, abolished that practice in response to a call for such action by the Oklahoma-Kansas organization. They also took steps for further coordination of scouting work through the publication of a monthly periodical known as "The Swab," the first issue of which appeared at the convention.

Presidents of the two organizations will work with their respective executive committees in developing final details whereby the two scouting groups are to come under the banner of the National Oil Scouts of America.

Ford Turner, Pure Oil Co., San Angelo, is the new president of the national association and R. P. (Bob) Brewer of the Barnsdall Oil Co. heads the Oklahoma-Kansas organization. Mr. Turner succeeded G. R. Nicholson of the Empire Oil & Refining Co., Amarillo, in the presidency.

"Pete" Booth, Humble Oil & Refining Co., Breckenridge, was elected chairman of the national association's executive committee. He succeeds R. T. Lutz, Humble Oil & Refining Co., Vernon, who will continue to serve the association as editor of "The Swab."

Other national association officers are William Leisk, Shreveport-El Dorado Pipeline Co., El Dorado, Ark., first vice-president, succeeding Ford Turner; D. J. Finley, Marland Production Co., second vice-president, succeeding R. C. Edwards, Gulf Refining Co. of Louisiana, Shreveport; Ed B. Dilley, Atlantic Oil Producing Co., San Angelo, secretary-treasurer, succeeding John H. Langston, Sun Oil Co., Dallas.

A paper presented by J. A. Bonham at the scouts meeting is published on page 60.

The election was spirited, some of the contests for office bringing out close votes. Those honored by nominations included the following:

For president: J. T. Hamilton, Sun Oil Co., and "Jimmy" Chisholm, Eastland Oil Co.

For first vice-president: Tom Terry, The Texas Co., and G. C. Phillips, Marland Oil Co.

For second vice-president: R. T. Lutz and D. J. Finley, Marland Production Co., and Paul Madden, Pure Oil Co.

Ford Turner
President of National Oil Scouts Association of America

For secretary-treasurer: Harry Sample, Vacuum Oil Co., C. W. Wise, Producers & Refiners Corp., R. O. Frame, Humble Oil & Refining Co., and C. C. Pope, Sun Oil Co.

Chairman of the executive committee: J. M. Charlton, the California Co., and G. C. Phillips.

A number of constructive papers dealing with scouting methods and field activities of the petroleum industry were presented in printed form. All in attendance were presented copies, eliminating the necessity for their being read at the convention.

Ford Turner and Ed B. Dilley cooperated on an exhaustive paper dealing with West Texas; Edward M. King of the Phillips Petroleum Co., dealt with the Lubbock district, in the south plains area of the Texas Panhandle; and J. W. Caldwell, Jr., of Prairie Oil & Gas Co., discussed the Wichita Falls or North Texas division.

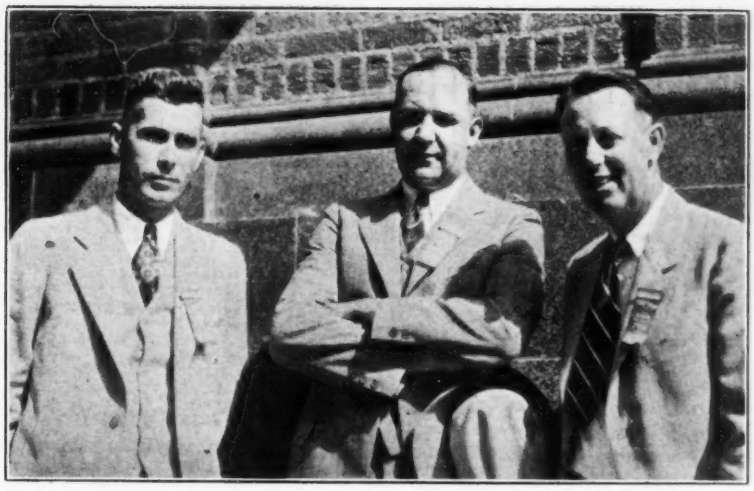
L. S. McGee of Humble Oil & Refining Co., and Tom H. Terry, The Texas Co., dealt with 1928 developments in southwest Texas; G. R. Nicholson of the Empire handled the present status of the Panhandle region; D. H. Bancroft and J. H. Fox, Arkansas Natural Gas Co., Shreveport, discussed discovery and development of the Richland, Louisiana, gas field; J. A. Bonham and H. C. Cortes, Vacuum Oil Co., dealt with Gulf Coastal scouting; and Miss Louise Pilcher, Pure Oil Co., handled east and central Texas development.

AN ACCOMPANYING table taken from the paper of Messrs. Turner and Dilley gives a tabloid history of development in the Permian salt basin region of West Texas from the time of discovery to April 1, 1929, together with estimated ultimate yields set up for the several development areas therein.

"As time goes on," they said, "more and more west Texas oil will be discovered, produced and distributed; but anyone would be foolish indeed to try to predict with any degree of precision what the situation will be a year from now or any more distant time in the future.

"It is very possible that the 235,000,000 barrels already produced and the additional 600,000,000 or 800,000,-

L. E. Barrows, The Texas Co., and "Jimmy" Chisholm, one of those nominated for president



W. N. O'Roark, Standard of Louisiana; D. J. Finley, national second vice president; and G. C. (Cleve) Phillips, one of those nominated for first vice president

John H. Langston, retiring national secretary-treasurer, and C. W. Wise, one of those nominated for secretary-treasurer

Tom H. Terry, one of those nominated for first vice president, and Geo. R. Coates, Independent producer, Midland

"Pete" Booth
Chairman of national executive committee

William Leisk
National first vice president

R. T. Lutz
Editor of "The Swab"

G. R. Nicholson
Retiring national president

Tabloid History of Development of West Texas Fields

Name of Field	County	Date of Discovery	Drilling Wells	Prod. Wells	Present Daily Avg. Prod.	Recovery to April 1, 1929	Ult. Recovery Estimated Total
Westbrook	Mitchell	Oct. 1920	0	141	2,875	6,135,237	15,300,000
Big Lake	Reagan	May 1923	5	235	18,500	38,545,316	*50,000,000
Powell	Crockett	May 1925	0	45	1,900	1,863,020	4,000,000
Wheat	Loving	Sept. 1925	4	9	625	108,156	Undeveloped
McCamey		Aug. 1926	..	....	.....	.....	.....
Taylor	Upton	Apr. 1926	1	298	10,000	14,292,636	25,000,000
Wentz	Crane	Oct. 1926	..	....	.....	.....	.....
Church & Fields		Mar. 1926	..	....	.....	.....	.....
McElroy	Crane	June 1926	3	246	42,000	48,019,922	150,000,000
Waddell	Crane	Aug. 1927	1	2	30	10,963	Undeveloped
Cosden-Connell	Ector	Oct. 1926	0	1	5	10,031	Undeveloped
McMillin	Runnels	Aug. 1927	1	3	150	70,338	Undeveloped
Chalk		Nov. 1925	..	....	.....	.....	.....
Roberts	Howard	Oct. 1927	40	310	45,000	9,706,766	60,000,000
Settles	Glasscock	Aug. 1928	..	....	.....	.....	.....
Yates	Pecos	Oct. 1926	12	295	87,500	35,004,119	200,000,000
Hendrick	Winkler	Nov. 1926	39	570	170,000	76,304,277	165,000,000
Scarborough	Winkler	May 1927	2	5	210	24,529	Undeveloped
Leck	Winkler	Aug. 1928	5	11	3,000	397,692	Undeveloped
O'Brien	Winkler	Sept. 1928	4	5	1,000	147,572	Undeveloped

*Deep pays not considered.

000 barrels in sight represent only the beginning."

In discussing the Lubbock district, Mr. King referred to 80 test wells drilled in the flat caprock area of the Llano Estacado, or staked plains. Fourteen of the total were drilled in Garza county, where three small wells were completed; the rest were distributed over 23 counties. At present, about 20 scattered tests are being made in the South Plains area.

Mr. Caldwell described wildcatting as probably more extensive in the Wichita Falls district than in any other part of Texas. This he had found largely due to the numerous independent operators there and the help they receive from major companies.

"Undoubtedly," he said, "the reason for so many small independent operators centering in Wichita Falls is due to the fact that in certain areas a dry hole does not condemn a 40-acre tract; therefore, making it possible for them, upon the slightest showing in a wildcat well, to make their decision and close a deal in less time than the major companies can go through their regular routine of lease buying."

In dealing with the Panhandle territory, Mr. Nicholson made the observation that a major industry has been developed from the burning of carbon black at plants built to operate on residue gas from raw natural gasoline manufacturing equipment.

Texas, he said, has now surpassed Louisiana in carbon black production, the daily yield totaling 331,400 pounds. Approximately 227,000,000 cubic feet of gas is burned daily in the carbon black industry of the Panhandle.

Grease Gun Specifications To Come Up June 6

WASHINGTON, May 27.—Almost if not the whole of Thursday, June 6, will be given over to the discussion of subjects of interest to the marketers of petroleum products by the 22nd meeting of the National Conference on Weights and Measures, the organization made up of weights and measures officials of the states, counties, cities and towns of the United States and manufacturers of weighing and measuring devices, representatives of industry and business and others interested in various aspects of weights and measures regulation. The conference begins June 4.

The thing of greatest interest will be the code, tentatively adopted a year ago for the dispensing of greases. The code will come up in routine fashion because the conference rule provides that a year shall elapse between the tentative and final adoption.

Of course the code is binding upon only those weights and measures officials authorized, by the laws of their creation, to prescribe regulations. The conferences are held in Washington on account of the work that is done by the Bureau of Standards, which is advisory in all its work.

The tentative program calls for prepared addresses on a number of topics but it is believed the discussion of the code relating to the dispensing of greases will be the chief feature. The program calls for an address on gasoline-meter installations in a ramp garage at Richmond, Va. by B. W. Ragland, chief of the bureau of weights and measures in that city; observations on certain air-operated gasoline-meter installations, by I. L. Miller, commissioner of weights and measures in Indiana; the solution of air in gasoline, by O. C. Bridgeman, research associate of the Bureau of Standards for the Society of Automotive Engineers; and cooperative program of the American Automobile Association, by Ernest N. Smith, the general manager of the association.

National Oil Shows, Inc. Directors to Meet

CHICAGO, May 24.—Lou Harrington, secretary and general manager of the National Oil Shows, Inc., has called a special meeting of his directors and other members for June 3. The organization now has 51 members, according to Mr. Harrington. Any manufacturer of equipment or merchandise catering to the oil trade is invited to attend the meeting.

Matters for consideration are revision and ratification of the by-laws; electing additional directors and vice presidents, and selecting a time and place for the exhibition which Mr. Harrington is planning for Chicago in the fall.

Mr. Harrington says that consolidation of his show with the International Petroleum Exposition, held annually in Tulsa, is being discussed and he is anxious to get the reaction of his members and equipment men generally in regard to such merger. They will discuss this at the special meeting.

Ohio Tankwagon Up 1c

CLEVELAND.—On May 29 Standard Oil Co. of Ohio advanced tank wagon and service station prices of gasoline 1 cent throughout Ohio, making new state-wide prices 20 cents and 21 cents respectively, including 4 cent tax.

Marketing Code State Chairmen Named

CLEVELAND, May 23.—Some of the six chairman of the regional committees on the code of marketing practices of the American Petroleum Institute have appointed committee chairmen to serve in each state in their territories, in line with the plan formulated by the Institute for making every marketer in the business thoroughly familiar with the code and what it means.

Henry M. Dawes, president of the Pure Oil Co. and chairman of the middle west regional committee has appointed the following as chairmen of state committees in his territory: Illinois; P. D. Sweney, Sweney Gasoline & Oil Co., Peoria; Wisconsin; J. M. McLaughlin, Bartles Maguire Oil Co., Milwaukee, and president of Wisconsin Petroleum Association; Iowa; James M. Cushman, International Oil Co., Des Moines; Ohio; W. A. Milne, Ohio Petroleum Marketers Association, Columbus; Indiana; J. B. Gafill, Gafill Oil Co., South Bend; Minnesota; Paul E. Hadlick, Minnesota Petroleum Association, Minneapolis; South Dakota; F. H. Buehler, Dacotah Oil Co., Madison; Nebraska; Charles M. Sutherland, Nebraska Independent Oil Men's Association, Lincoln; Michigan; H. H. Ragle, Michigan Oil Men's Association, Jackson.

P. M. Miskell, regional chairman of the Mid-Continent, has appointed R. R. Irwin, president White Eagle Oil & Refining Co., chairman of the Kansas committee. His first Oklahoma appointee declined to serve.

Roy B. Jones, regional chairman for Texas, South Arkansas and Louisiana, has appointed the following chairmen: Texas; E. T. Moore, Simms Oil Co., Dallas: Louisiana; H. F. Smith Jr., Liberty Oil Co., New Orleans; Arkansas: T. J. Gay, Gay Oil Co., Little Rock.

Report on Ethics Code Is Expected Soon

WASHINGTON, May 23.—What the Federal Trade Commission thinks of the code of marketing practices adopted for our industry by the trade practices conference in St. Louis Feb. 11, may be known within a few weeks.

The report to the commission has not been drafted, it was said at the commission's offices here, because of the large volume of similar reports which a few men must make. Examiner Flannery, who is to draft the petroleum report, has just completed reports on other conferences held just previous to the St. Louis conference.

Judge Edgar A. McCulloch, chairman of the commission, who presided at the St. Louis conference, is now busy with the inquiry into the ownership of newspapers by the International Power & Paper Co.

It was said it was unlikely the Flannery report, when drafted, would be taken up until there is a lull in or an end to the power investigation, but that the petroleum case was near the top of the commission's activities.

Earl L. Miller

New Sales Head for Shell Is Earl L. Miller

ST. LOUIS, May 27.—Earl L. Miller, who has been with the Shell interests for 15 years, has been appointed vice-president in charge of sales of the Shell Petroleum Corp., with headquarters here, according to U. de B. Daly, president.

Mr. Miller was formerly vice-president of the Shell Oil Co. of California. He succeeds G. G. Woodruff, who resigned about a month ago.

The Shell Petroleum Corp. now distributes its products in 28 states and affiliated with it are the Shell Eastern Petroleum Products, Inc., Boston, Shell of Canada, Ltd., and Shell Oil Co., California.

RICHMOND, Va., May 23.—Storage facilities at the terminal of the City Point Oil Terminal, Inc., on the James river at City Point, near Petersburg, have been leased to the Shell Eastern Petroleum Products, Inc., which is rapidly building a distributing system in the Middle Atlantic states.

The terminal company is owned jointly by the Delta Oil Co. of Petersburg and the Republic Oil Co. of Pittsburgh, and its plant has been the only sizable deep water terminal controlled by other than major companies in Virginia.

Gasoline Stocks Reduced 1,477,000 Bbls. April

NEW YORK, May 24.—There was a net increase of about 2,000,000 barrels in stocks of crude and refined oils east of California in April, according to the preliminary report of the American Petroleum Institute.

This was due to an increase of 3,700,000 barrels of gas and fuel oil stocks at refineries, which offset a decrease of 1,477,000 barrels of gasoline at refineries and about 700,000 barrels of kerosene, lubricating oils and miscellaneous oils, and 91,000 barrels of crude in pipe lines and at tank farms.

The institute's preliminary report for March showed an increase of about 5,000,000 barrels in stocks during that month. Then crude oil stocks gained 2,656,000 barrels and gasoline stocks 1,175,000 barrels.

In April pipe line and tank farm crude stocks east of the Rockies decreased 91,000 barrels. At refineries domestic crude stocks increased 389,000 barrels, foreign crude stocks 214,000 barrels, gasoline decreased 1,477,000 barrels, kerosene decreased 244,000 barrels, gas and fuel oil stocks increased 3,733,000 barrels, lubricating oil stocks decreased 235,000 barrels and miscellaneous oils 259,000 barrels.

Exhibit Is Planned Near A.P.I. Convention

CHICAGO, May 24.—James A. Gilmore, secretary of the American Oil Men's association, has announced his organization will foster an exhibit of equipment at the Congress Hotel, Chicago, next December 2, 3 and 4, at the same time as the annual meeting of the American Petroleum Institute at the Stevens Hotel, two blocks away.

The A.P.I. has never fostered equipment exhibits in connection with its meetings. For this reason, exhibit space is not available at this time in the Stevens hotel. Mr. Gilmore says his organization will offer no competitive program at the Congress. A.P.I. members and visitors will be invited to visit the show in the Congress however, when they find it convenient.

Shortly after the announcement to the equipment people, Mr. Gilmore reported that a quick demand developed for exhibit spaces in the Congress Hotel, more from manufacturers of equipment for refiners and producers than from manufacturers of oil jobbing and retailing equipment.

West Texas Gasoline to Carry the Load Of Increased Crude Prices

By Allen S. James
N. P. N. STAFF WRITER

TULSA, May 25

WEST TEXAS refiners, if they are to retain the position they held before crude oil was advanced in their district May 21, will have to obtain at least 2.375 cents a gallon more for their gasoline than they were getting just prior to the advance, since gasolines probably will have to carry all the increased cost of operation.

It is barely possible some of the increased crude cost will be carried by gas oil and fuel oil but, with the plentiful supply of those two commodities in that as well as other districts, that seems hardly probable. Kerosenes are a negligible factor, and distillates cannot be expected to take any of the load at this season of the year.

When the Humble Oil & Refining Co. took West Texas crude off a flat price basis of 65 cents a barrel and incorporated a gravity schedule the result was an increase in prices ranging from 5 to 53 cents a barrel. In Table No. 1 listed the average gravity of the oil in each district, together with the new price for that gravity and the increase as a result of the schedule being put into effect.

Table No. 1

Average Gravity of Oil in West Texas Pools, Present Price, and Increase per Gallon Since Advance of May 21.

POOL	Avg. Gravity	Present Price	Increase
Church Field	31.9	$0.98	$0.33
McElroy	32.9	1.02	.37
Crockett	29.4	.90	.25
Glasscock	31.8	.98	.33
Howard	32.2	1.02	.37
Pecos (Yates)	29.5	.90	.25
Upton (Hurdle)	28.0	.86	.21
Monahans (O'Brien)	39.1	1.18	.53
Winkler (Hendricks)	30.3	.94	.29

The averages given are not weighted. It would be impossible for a weighted average gravity for each field to be determined for at least 15 days, or until the gaugers have made their reports.

It will be observed from the table, however, that the increase in price for the major fields—Pecos and Winkler—ranged from 25 to 29 cents. The smaller increase will be used in the following comparisons of cost increases, although a weighted average probably would be nearer 30 cents.

A compilation of weekly operations reports from West Texas refiners to NATIONAL PETROLEUM NEWS for a four-weeks period comprises a part of Table No. 2, which also gives the yield in percentages, in gallons and the estimated return from a barrel of crude prior to the crude advance.

It will be observed that the gasoline yield is approximately 25 per cent or 10.5 gallons per barrel of crude charged. If gasoline is to carry the entire burden, that means the increase of 25 cents a barrel in operating cost will have to be placed on the 10.5 gallons of gasoline. Dividing the 25 cent increase in cost by the 10.5 gallons of gasoline per barrel of crude shows that each gallon of gasoline must be increased in price 2.38 cents, or a portion of the increase in operating costs must be paid out of accrued profits.

Another portion of Table No. 2 lists the approximate average return from a barrel of crude prior to the advance. The prices are based on the average prevailing quotations in that district before the tank wagon and crude changes. The price of 7.50 cents a gallon for gasoline represents the price for 58-60, U. S. Motor gasoline, and probably is a fraction high, due to the fact that many of the West Texas refiners market their production as naphtha or a low gravity, 437 e.p. gasoline, at lower prices than those obtained for full specification U. S. Motor goods.

Table No. 2

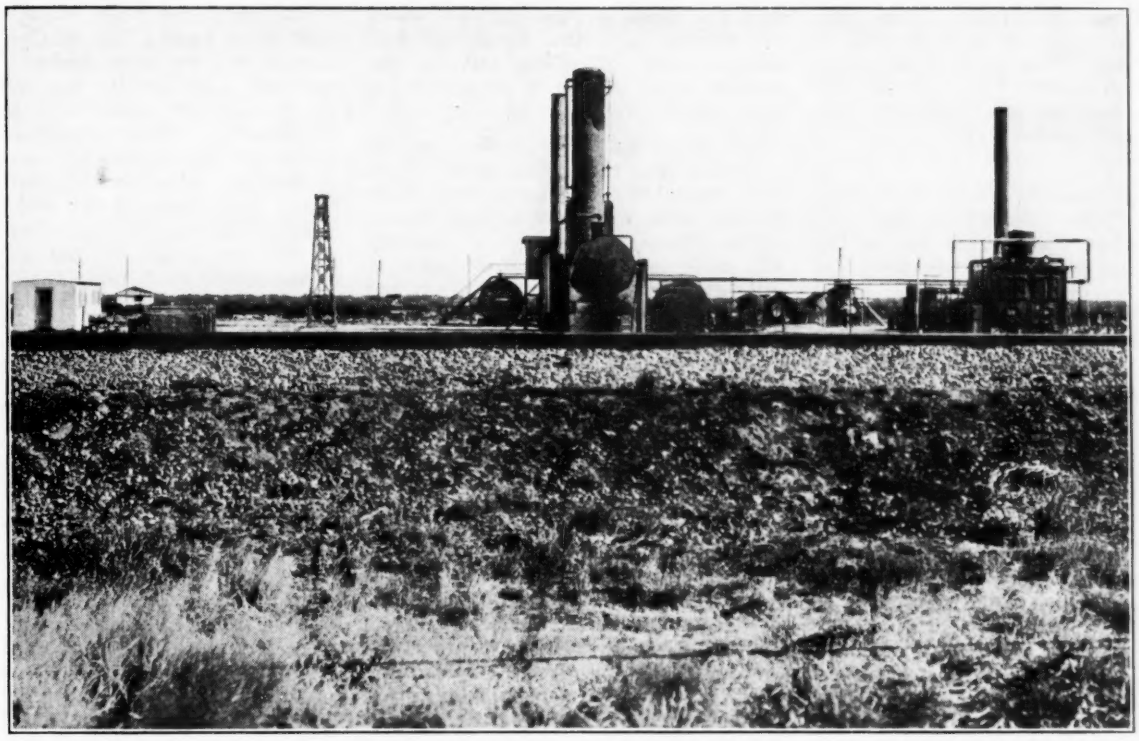
Tabulation of Average Yield from a Barrel of West Texas Crude, Together with Estimated Return as Compared with Cost of Operation Before and After Crude Price Advance, May 21.

(Yield figures taken from weekly operations compilations as shown in NATIONAL PETROLEUM NEWS.)

PRODUCT	Per Cent	YIELD Gallons	PRICE F.O.B. PLANT PRIOR TO CRUDE RAISE (Cents per Gal.)	RETURN FROM BBL. CRUDE	
Gasoline	25.0	10.5	7.50	78.75	
Kerosene	.1	.04	5.00	.20	
Distillate	1.0	.42	2.75	1.15	
Gas Oil	14.0	5.88	2.125	12.50	
Fuel Oil	54.0	22.68	.714	16.18	
Other Products, Loss, etc.	5.9	2.48	.....	.....	
	100.0	42.0		$1.0876	
Return from bbl. crude					$1.09
Cost of crude per bbl. (before increase)				$0.65	
Pipe Line and Gathering Charge				.10	
Overhead				.10	
Treating				.03	
					.88
Margin					.21
Operating Cost After 25-cent Advance				$1.13	
Return From Bbl. Crude on former price of Gasoline				1.09	
Deficit				.04	

THE gross return from a barrel of crude is figured at $1.09, before the advance. Out of this the refiner had to pay for his crude at 65 cents a barrel, plus the pipe line charge of 10 cents a barrel, his overhead, figured by two or three refiners at close to 10 cents a barrel, and treating at close to 3 cents a barrel. These items amounted to 88 cents a barrel, leaving 21 cents a barrel out of which must come cost of naturals blended, tank cars leased or bought, and other items.

The 25 cents increase in crude jumps the cost to $1.13, which apparently throws the refiners 4 cents in the red unless the price of gasoline is increased.



Typical of West Texas refining plants, built at low cost, to be put into operation quickly. The plant of the Wickett Refining Co. at Wickett, Texas, capacity 1500 barrels a day. Its storage tanks do not show in the picture

West Texas Plants Stronger Competition In Middle West This Season

By Allen S. James
N. P. N. STAFF WRITER

TULSA, May 25

REFINERS in West Texas are almost unanimous in believing that, after this summer, their district will hold the key to gasoline, gas oil and fuel oil prices for the country. They believe Oklahoma (Group 3) probably will continue to be the nominal price basis for the nation, but that Group 3 prices will be dictated largely by West Texas. Many of the complaints heard last summer against West Texas gasoline have been ironed out during the past winter. One complaint was with regard to inability to get prompt delivery of goods. It must be remembered, however, that the district was a new one last summer, in a region sparsely populated and served by one-track railroads which did not have the best of equipment. The sudden development of the oil fields thrust upon the railroads problems which had to be solved before smooth, efficient movement of goods could be accomplished.

That problem apparently has been solved, partly by the decrease in amount of crude moved by tank cars since pipe lines have been completed which permitted use of those tank cars to more refined products; partly by additional yard facilities at the refinery centers and the building of terminals to handle the goods, as well as the installation of more railroad equipment.

Another complaint was on the quality of the gasoline produced. Much of it would be off color when received at destination, the odor was bad, the gravity was off and the sulfur content was extremely high.

THE accompanying discussion of the general status of West Texas refiners this 1929 season was written before the recent advance in crude oil prices in that district. The article immediately preceding in this issue discusses the relatively greater handicap over Mid-Continent plants the advance in West Texas crude has placed upon refiners in that district.

Most of this so-called bad gasoline was made by the first refineries built in the district and these plants, in a majority of cases, were assembled from parts of refineries which had been shut down in other districts, and in a few cases partly dismantled. One refinery in West Texas originally was a portable unit and the railroad cars on which the plant was transported from site to site are stored on a siding somewhere in Texas at the present time. As many second hand parts as possible were used in constructing the first plants.

One refinery in particular the writer recalls was on the pipe still order. The pipes were laid side by side and on top of each other and a brick fire box built around them. Instead of connecting the pipes at each end with elbows or welded bends of some kind, ordinary "Ts" were used, with short nipples connecting the Ts. The open end of the Ts had been plugged with ordinary screw plugs.

It did not cost much to build this still, and it did not cost much to re-

place burned out tubes. The still could handle 2400 to 2800 barrels of crude a day. The plant made gasoline, gas oil and fuel oil and the cost was such that the goods could be sold considerably under the prices in Group 3.

More permanent plants have been built out there this winter and still more will be constructed before the end of the year. The chemists for these companies, as well as the chemists for most of the smaller plants, have about solved their treating problems for odor, color and sulfur, and also, through the plentiful use of natural gasoline, have gotten away from their gravity troubles. It must be borne in mind that the altitude in much of the West Texas district is approximately 3000 feet higher than in much of the middle west, and a good allowance must be made for the goods to meet gravity specifications when shipped into the Standard of Indiana territory.

DESPITE these unfavorable conditions last summer and fall a large percentage of the gasoline produced in West Texas was marketed in the middle western states. A check of shipments in September, 1928, from 11 plants representing 78.4 per cent of the total still capacity operating that month, showed that 40 per cent of the gasoline shipped moved into the middle West.* That means that the gasoline moved in direct competition with Group 3 and Group 2. That was at a time when there were a comparatively few of the higher type plants in operation. Several efficient plants have been placed into operation since that time.

Freight rates from West Texas to middle western states, such as Nebraska, South Dakota, Wisconsin, Minnesota, western part of Indiana, Illinois and Iowa range from 0.25 to 0.375 cent a gallon above Group 3 on gasoline. Selling on a Group 3 basis in competition with other refining centers nearer the Standard of Indiana territory, West Texas refiners therefore will receive from 0.25 to 0.375 cent a gallon less f.o.b. refinery for their gasoline than would the Oklahoma refiners. Due to the cheaper crude oil prices in West Texas they can afford to absorb this difference provided they get any break at all in the gas oil and fuel oil markets.

It probably will be difficult for the West Texas refiners to sell on other than a Group 3 basis until freight rates are more evenly adjusted. The rates in that district have been made, through intervention, a part of the general Southwestern Freight Rate case now before the I.C.C.; but it may be months or even years before any decision is reached. The rates vary so much in the district under the present tariff that about the only uniform basis of selling left for the refiners is on Group 3 when moving their goods into the middle west.

All the output of the refineries will not move into the middle west. Some will move into Colorado and New Mexico, some will move to local points within Texas, and quite a quantity will move to Gulf ports for coastwise shipment, if practices in effect the past several months are continued.

Railroads in that district will get some of the local movement, but because of mileage freight rates and the fact that there are good highways in that district, some of the gasoline will continue to move by tank truck.

Before oil was discovered in West Texas the railroads serving that district had very little freight revenue other than cattle shipments and fruit shipments from the south and west. The Rio Grande division of the Texas & Pacific Railroad, from Big Spring to El Paso, for instance, never paid its way. To aid these lines freight differentials within the state were established. Refiners in West Texas say that for hauls of 125 miles or more within the state the rates are almost prohibitive.

One or two large refiners in Texas in the past several months have bought considerable quantities of West Texas gasoline for shipment to the Gulf and for distribution via coastwise movement to their retail outlets in the south, southeast and southwest. These refiners may continue to buy a portion of the West Texas gasoline produced.

The Gulf Refining Co. has been one of the major purchasers. This company is constructing a 5000-barrel plant at Sweetwater and it may be depending on this plant, which will be in operation by Oct. 1, to supply the surplus gasoline needed.

THE plant at Sweetwater will be served by three railroads, the Texas & Pacific, the Orient, and the Santa Fe. That will give the refinery a six-way haul, and there should be no complaints as to delivery of gasoline under those conditions.

The Col-tex Refining Co. at Colorado is building a cracking plant which will be completed this summer. The Texas & Pacific railroad serves this refinery, and this railroad has completed the Lancaster terminal at Fort Worth, one of the six largest terminals in the United States, and there probably will be no further complaints regarding delays in shipments to the middle west.

Following the Texas & Pacific westward, at Big Spring the Cosden & Co., Richardson Refining Co., the Great West Refining Co. and the Big Spring Refining Co. have been built on a permanent basis, especially the first three named. J. S. Cosden will market his products under a brand and will also handle the output of the Richardson plant with his sales organization. That organization undoubtedly will seek to market the production wherever it can. The Great West Refining Co. and the Big Spring Refining Co. undoubtedly will do the same, and if that market is in the middle west, or in the south via coastwise movement, that is the way the gasoline and other products will move.

AT WICKETT the Wickett Refining Co. and the Bluebonnett Refining Co. also will seek their markets wherever they can. Out at Pyote the Valley Refining Co., the Amarillo Producing & Refining Co. and the Tonkawa Refining Co. will also have no preference as to where the gasoline moves, just so long as it is kept moving. These plants have very little storage and of necessity will have to keep the production rolling.

The Burford Oil Co. at Pecos will attempt to market part of its production locally under its brand "Crystal Gasoline," and also will try to break into the middle west with the same product. This company has as fast if not faster delivery to Chicago and vicinity than any other refiner in the district.

The plant is served by the Santa Fe. Cars loaded in the afternoon are picked up and pulled to Amarillo, where they are out on the Santa Fe's "Green Fruit Express" and are in Chicago the afternoon of the fourth day, and spotted on the customer's siding ready to be unloaded the morning of the fifth day. The plant also can switch to the Texas & Pacific lines.

The refineries at El Paso probably will not move any quantity of gasoline into the middle west. The Del Rio Refining Co. also probably will seek its market in the south of Texas and along the coast. The San Angelo Refining Co. sells quite a bit of its production locally and moves some of the surplus into the middle west.

The Humble Oil & Refining Co. last year sold a quantity of gasoline from its McCamey plant for northern shipment. It probably will use most of the gasoline from that plant this year through its own retail system but the plant could be quite a factor should officials decide to move gasoline north again in competition with Group 3.

Safety Council Is Organized

TULSA, May 25.—Organization of the Petroleum Safety Council, composed of safety engineers in the Mid-Continent, was completed May 24 at a meeting in the assembly room of the Mid-Continent Oil & Gas Association. The council will meet on the fourth Friday of each month.

*See NATIONAL PETROLEUM NEWS, Nov. 28, 1928 issue, page 21.

Agree On 6000/1 Oil-Gas Ratio In Little River

By John Power
N. P. N. STAFF WRITER

TULSA, May 25.—Not more than 6000 cubic feet of gas is to be produced with each barrel of oil in the Cromwell sand area in the south part of Little River pool. An agreement, effective May 20, establishing 6000/1 as the maximum gas/oil ratio in the shallow area has been reached by the 25 companies operating in the field, which is part of the Seminole district.

The "gentleman's agreement," reached through the superintendents of the various operators, is designed to effect a conservation of the gas which is produced with the oil from the Cromwell sand. A state law, limiting the amount which may be taken from a plain gas well to 25 per cent of the open flow test, does not affect the combination producers.

By keeping the amount of gas produced per barrel of oil to a fixed maximum, it is expected that not only will large quantities of gas be saved, but also the oil-producing energy of the gas in the sand will be preserved to aid in future production. Increased total recovery, at a lower cost per barrel, is also expected to result from adherence to the plan.

There are now 17 wells producing both oil and gas in this area, which lies along the south and southeast flanks of the Little River pool, in twp. 7N-6E, Seminole county. Combined production now totals about 7000 barrels daily, with the wells making in addition from three million to 25 million cubic feet of gas per day. There are also about 10 gas wells, with gas productions ranging up to nearly 40 million cubic feet per day.

No set rule has been established for the accomplishment of the desired gas control. Most of the familiar methods for maintaining back pressure on flowing wells are in use, including tubing of various sizes set on packers, "Christmas trees" of various designs, and high pressure traps.

A central gathering station has been selected for the compilation of data on the results obtained. The local division superintendents bring to this office the daily oil and gas gages. Ratios are figured by a combination clerk and umpire, maintained by the entire group of operators. It is believed that the present gas/oil ratio of 6000/1 will be materially reduced when the present arrangements are working smoothly.

There are now about 25 drilling wells in the area, which it is believed may cover as much as 1400 productive acres eventually.

77% of Refining Capacity Promises Figures

CLEVELAND, May 27

REFINERS representing 76.96 per cent of the refining capacity of the country have consented to aid the American Petroleum Institute collect and publish weekly statistics on refinery operations.

Refiners with total capacity of only 60,500 barrels have definitely refused to cooperate, says W. R. Boyd Jr., executive vice-president of the institute.

Last week, favorable answers on the proposition were reported from 81 companies representing 42.8 per cent of the refining capacity of the country.

The list of cooperating companies now totals 134, a gain of 53 over those reported last week. The new companies added are: Amarillo Producers & Refiners Corp., Amarillo; Beacon Oil Co., Boston; Bradford Oil Refining Co., Bradford, Pa.; Burford Oil Co., Pecos, Tex.; Conewango Refining Co., Warren, Pa.; Crystal Oil Refining Corp., Shreveport; Empire Oil Works, Inc., Reno, Pa.; General Petroleum Corp., San Francisco; Great West Refining Co., Big Spring, Tex.; Hancock Oil Co., Long Beach, Calif.; Island Refining Co., Pittsburgh; Midwest Refining Co., Casper, Wyo.; Mutual Refining Co., Warren, Pa.; Orient Petroleum Co., Wichita Falls, Texas; Panhandle Refining Co., Wichita Falls; Pecos Valley Refining Co., Pyote, Texas; Rio Grande Oil Co., El Paso, Texas; Root Refineries Inc., Eldorado, Ark.; Shreveport-El Dorado Pipe Line Co., Shreveport, La.; Skelly Oil Co., Tulsa; Superior Oil Works, Warren, Pa.; Texas-Mexican Oil & Refining Co., Laredo, Texas; Tidal Refining Co., Tulsa; Tidal-Western Oil Corp., Tulsa; Tiona Refining Co., Clarendon, Pa.; Union Oil Co. of California, Los Angeles; Utah Oil Refining Co., Salt Lake City; Vickers Petroleum Co., Wichita, Kans.; Western Oil Corp., Beckett, Okla.; Western States Petroleum Corp., Long Beach, Calif.; White Eagle Oil & Refining Co., Kansas City; White Oak Refining Co., Tulsa. The extent to which each refining district is represented by companies which have promised to cooperate in furnishing figures on operations is shown in the following table:

District	Total Capacity Bbls	Capacity Answering Favorably Bbls.	Per cent of District
East Coast	595,200	495,700	83.28
Appalachian	116,600	102,550	87.96
Indiana, Illinois, Ky., etc.	324,000	310,800	95.93
Oklahoma, Kansas and Mo.	421,200	251,600	59.73
Texas	680,600	472,200	69.38
Louisiana and Arkansas	253,830	205,000	80.76
Rocky Mountain	130,400	87,950	67.45
California	841,460	662,700	78.76
Total	3,363,290	2,588,500	76.96
Texas (Gulf Coast)	449,000	316,000	70.40
Louisiana (Gulf Coast)	159,000	159,000	100.00

Rio Grande Oil Expands California Plant

LOS ANGELES, May 24.—Rio Grande Oil Co. plans to have its new marine terminal, covering 12½ acres at Long Beach, in operation by July 1, according to announcement by L. M. Lockhart, vice-president.

The terminal, which will be connected with the company's Vinvale refinery by three pipe lines, 4, 6 and 8-inch, will have storage facilities for over 500,000 barrels of oil. Activities of the company will be extended to trade with Atlantic seaboard and foreign ports with the completion of this receiving and loading wharf, whereas at the present time it is unable to produce more than its local market needs.

Capacity of the company's refinery has been increased 15,000 barrels per day and two Jenkins cracking units with a combined capacity of 3000 barrels per day are now nearing completion. The terminal and increase in the size of the refinery will enable the company to care for part of its Elwood crude and thereby enable it to recover part of the loss it sustained by a recent cut in the price of that crude.

The Editors' Viewpoint

National Petroleum News

Conservation, and Future Burning Oil Supply

THE widespread agitation for limitation or control of crude production has given rise to some thought regarding the future stability of the supply of domestic burner oil. The Oil Heating Institute has received a number of inquiries as to the effect such a conservation movement would have on the supply of oil for home heating.

Some question as to future prices has been expressed by consumers, jobbers handling various grades of burner oil and manufacturers of oil burners. The latter class probably is more concerned than present consumers, since any fear of curtailment in burner oil supply would affect prospective burner installations more quickly than current consumers.

To allay this uneasiness it may be said that the supply of the best grades of furnace oil for domestic consumption could be enlarged many times beyond current demands as a direct result of the conservation movement.

Domestic burners in the northern states, particularly, require an oil which will flow freely at low temperatures. This is important if the oil seller is to be able to make deliveries in cold weather without the expense of special heating of the oil before it is loaded into tank trucks.

In the second place the ideal oil for domestic heating should have a relatively low flash point so that it will catch quickly from the pilot or electrical spark. This property of the oil aids thermostatic control and lighting cold furnaces.

The supply of low cold test, low flash oils which can be produced by simple distillation of crude is quite limited. If the burner industry had to depend for the narrow cut of this product from crude, there would not be a great future for it.

However, the cracking process produces, or can be made to produce, a product which most people now believe to be superior to straight reduced furnace oils. The product consists of bottoms from pressure distillate rerun stills and recycle gas oil from the cracking plant itself.

The cracked furnace oils, from any crude, whether it originally had a high or low cold test, are desirable since they will flow freely at low temperatures. They likewise have a low flash point as compared with straight reduced oils.

Any conservation plan would force more cracking to meet increased gasoline demand without drawing to the same degree on crude oil resources.

Production of heavy fuel oils, industrial fuel, bunker oil and the like undoubtedly would be reduced under such a plan. But these heavy oils have been produced in quantities far beyond normal requirements. They have been competing with coal for business at low prices.

It should be remembered in connection with this discussion that the recycle stock and pressure distillate bottoms produced as a by-product of cracking, and valuable as home heating oil, also have a gasoline value. They may be recharged or kept in the cracking coils and additional quantities of gasoline produced from them. The gasoline value of these products must necessarily exert some influence on furnace oil prices, particularly in times of an actual oil shortage. In times of surplus, of course the effect is more or less negligible. In general, however, and as far ahead as can be seen now, there will be ample supplies of oil for home heating at reasonable prices.—J. C. C.

"Orderly Development" Administration's Keynote

"ORDERLY development," words frequently used by Ray Lyman Wilbur, Secretary of the Interior and chairman of the Federal Oil Conservation Board, are of great significance to the leaders of the oil industry.

Orderly development is the key note, the text, or ruling concept of the Hoover administration. Dr. Wilbur, time and again, has taken the trouble to suggest to those interests in the oil industry's conservation program that infinite good would result from the taking of pains by those having the power to govern the development of a given oil field to have that development orderly.

It would save the drilling of many wells. It would save the gas needed to bring the oil from such immense depths as rule in the Kettleman Hills field. It would bring into production wells only as and when needed. It would cut down the above ground storage. It would reduce the cost of storage and make for the economical running of crude from well to refinery.

In a word, order development, as visioned by the man chosen by President Hoover to carry out his conservation policy, might, without combination, bring down production to the point where there would be more nearly that desired balance between supply and demand.

Orderliness is the first law of Heaven; also that of the Hoover administration. Standardization, simplified practices and all the things for which Herbert Hoover has stood in the years he has been in the service of the United States is opposed to waste. Waste in bringing crude to the surface before it is needed is just as obnoxious to the Hoover and Wilbur sense of orderliness as any other waste.

According to Dr. Wilbur, orderly development is the natural result of the long view taken of anything so vital as the production and use of petroleum Combination or agreement to hold production in a given year to a

definite figure represented by the production of some other year, in the Hoover-Wilbur view, it is implied, represents another view.

Acceptance of the gospel of orderly development by Mark L. Requa, who hurried immediately thereafter to the Pacific coast to preach it to the part of that producing section of the industry is believed to be a fact worthy of reflection. Mr. Requa looked woebegone when Attorney General Mitchell's opinion was read to the American Petroleum Institute committee. He looked as if he had just seen the work of ten years to bring about real conservation thrown into the discard.

Consideration of the words orderly development, seemingly revived Mr. Requa and sent him to the Pacific coast to help Dr. Wilbur with his plan for a compact of states. In homely phrase, he seemed to recall the old saying that there were ways for killing a cat other than choking it with cream and butter.

The compact of oil states, by the way, is nothing more than cooperation by states and operators in oil fields for an orderly development of those fields—the producing of no more crude than can be economically and efficiently handled.

Take the word for it of a Washington newspaper man of many years experience. If confused as to the purpose of some move by the Hoover administration, apply the test of orderly development to it.—A. E. H.

A New Task for Umpire Collins

WITH the lifting of proration in Oklahoma and the increase in price of Mid-Continent light oil wildcatting is due for an increase.

There are vast stretches of country in Oklahoma and Kansas where big drilling blocks are under lease, merely awaiting encouragement through improved market conditions. Many contemplated tests, whose locations already have been made, are certain to be started.

Oklahoma has a citizen who has been highly useful in the past. He is Ray M. Collins, umpire for the Seminole district operators. He has served the greater part of the time since late in 1926 and his ability has been amply demonstrated.

Mr. Collins now has no public business before him. The corporation commission has been asked to issue an order saying that the market demand for Oklahoma oil is 725,000 barrels daily, which is more than the state can produce. Hence, Mr. Collins' usefulness, temporarily, is at an end.

There is much work to be done. Oklahoma should not forget that it again may become an offending section by overproducing. The numerous wildcats under way and about to be started will certainly bring us back to a period of surplus of supply.

Mr. Collins has, in the past two years, been instrumental in fostering many cooperative agreements relating to control of new pools. His experience along this line should not be wasted. It would be quite fitting, both from a practical standpoint and as evidence that Oklahoma operators mean to carry on in conservation effort, to keep Mr. Collins busy.

Under some auspices, probably under the wing of the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association, Mr. Collins should be retained to spend his time calling on the owners of wildcat tests and their neighbors and attempting to set up agreements for orderly and systematic development, in accordance with market requirements, of new pools which the wildcats may open. The familiar ounce of prevention would bring immeasureable results.

When the industry develops a man to the point where he is a competent prescribing physician, it should make the most of him.—L. E. S.

So Washington Fire Engines Can Idle

HERE is the secret behind the insistence of the Federal Specifications Board upon establishing a new grade of highly volatile motor fuel for purchase by the government.

It is so the fire department of the city of Washington, can carry out the obsolete rite of starting and idling the engines of its fire fighting equipment an hour or so each day without excessive dilution of the crank case oil.

Automobile engineers say that the theory on which the daily idling of fire equipment engines was based is now entirely exploded and Washington is probably the only place in the country—at least among major cities—where the practice is still followed. Men familiar with operation of automotive vehicles point out that not only is the daily starting of engines on fire equipment needless but it is damaging to the engine because it means operating it under the most unfavorable conditions possible.

The engine is started cold, which means excessive use of the choke and the dripping of the unburned fractions of gasoline into the crank case. Then, before the engine is warmed up to normal operating temperature, it is shut off again. That means not only excessive dilution of the motor oil but also may mean rust attack on the engine parts because the engine runs just long enough to form considerable water and not long enough to vaporize it and get rid of it.

The practice of idling the engines each day is a relic of the time when maybe an engine would start and maybe it wouldn't. Those days are long past. The reason why the Washington department keeps it up is that there is a law directing that it be done. The laws that govern the District of Columbia are enacted by congress. Repealing of the law by congress would be the only way to get the practice done away with.

That has been tried without success. So some government officials suggested that the government provide specifications for a new, more high volatile grade of motor fuel.

Ambulances and post doctors' cars are the only other vehicles mentioned as needing a fuel of extremely high volatility. It was stated that on a cold winter night when a doctor was busy attending epidemic cases, making short trips and long stops all night long, the crankcase oil with U. S. Motor gasoline in the tank, showed something like 50 per cent dilution in 100 miles.

Why not buy domestic aviation gasoline where a better grade of motor fuel is needed, even for Washington fire engines. How much difference in price would there be between domestic aviation and the Motor Fuel V, which the technical committee has now proposed?—P. T.

THE mail brings us one of those all too infrequent letters from a geologist friend. One of the delightful things about this correspondent is that we never know where the next letter will come from. He goes everywhere, particularly to the uncivilized portions of the earth. This one comes from Turkey. The letter:

HOTEL TOKATLIAN, GALATA,

"Dear Larry:

There must be some agreement between the Turkish government and the film people. In other parts of the world one travels on tickets, but over here it is on photographs. It started before I left London with a request for a half dozen pictures, has been going on constantly ever since, and will be necessary until I have finally crossed the border outward bound. Would I like to visit another town? Six photographs, please. Would I care to stay where I am? Six photographs, please.

"It has some advantages. If we were vain in South America we had to wait until next October when the itinerant photographer might plod into town. But here, in every Turkish village, unless it happens to be a market town which is closed up and deserted the other six days than market day, you can find a barber shop. And when he is through shaving the chin or the scalp of his final patron, the barber will move his chair onto the street, set up the box which is his camera and dark room, tear off a corner of a sensitized post card for his negative, take your picture, and then take pictures of the negative on other fragments—and there you are.

"When I've found all the oil there is or folks quit using it, I ought to be able to go into the movies,—character parts of course. A glance over my repertoire of 'stills' shows a peaked Lithuanian who should quit heavy work in the steel mills; a gaping idiot with malice in one eye and the other apparently lost; and a Cockney wharf rat who found a bargain (but an ill-fitting one) in a second hand clothes shop. It has never been the same character twice, and the fact I can't tell what it is going to be in advance might be distracting to a director—but with the 'talkies' it doesn't make much difference what the picture shows.

"Although I'd be surprised if they recognized me from my pictures on these local passports, the Turks do need something of this sort to identify people. Their own people have only one name and that's usually Hassan. Then with Turkish script they can seldom read that. After they have been translated I save my telegrams until I come back to Constantinople to find out what they were wiring about. On my last trip in the eastern provinces I was careless enough to fret over a wire that $6,000 had been sent to me in a town I had left. Of course I found out later they hadn't said anything about $6,000.

"I have been galloping around over most of this country. If he'll keep them supplied with a stream of photos, the authorities seem only too glad to do what they can for an American engineer. When I was rambling in Kurdistan over by the Tigris, they not only furnished a military guard, but the governor of the province would phone every time I reached an army post to make sure everything was all right. As my greatest danger was that of falling off my horse, such care seemed a little superlative, but then somebody on his staff may have seen me mount when we started and decided there was some danger.

"It is a good thing this principle of the League of Nations of making a new state for each race group isn't extended far into Turkey. They are still deluged with their attempt to 'Transfer Nationals' in the small European part, and seem only to have uprooted a crowd of Greeks and dumped them to starve in a foreign Greece, and the same with a crowd of Turks.

"Over east where one village is Armenian, the next Kurdish, and the next Arab, the job would not only be endless but its success would remove the little remaining pleasure these people have in life—their depredations and reprisals on their neighbors.

"Life in the tenth or the mud and stone villages of Asia Minor may not be amusing or even pleasant, but back here in Constantinople, they are doing famously. Nature did mighty well by the region of the Golden Horn and the Bosphorus. The ancestors of the Turks and their predecessors, the Eastern Romans, embellished it satisfactorily. The break-up of the Empire and the Sovietizing of Russia hurt their commerce and made them poorer, but gave them more time to rest in the coffee shops.

"They have done what they could for themselves. They've persuaded most of the Russian refugees to move on, but they have adopted their caviar, vodka, and pretty waitresses. They have taken the veils from their own women, banned the falsetto wail of the national music, which actually drove people to suicide, and a religion that frowned on potent beverages they have relegated out of its commanding position. Constantinople has been made a good town for oil men, although Turkey itself isn't likely to loom large as an oil country. If you're bound for Rumania or over to buy some crude from the Soviets, or down to see if they've started that pipe-line from Mosul to the sea, be sure your ticket is marked "via Constantinople."

See you soon,

Tio Esteban.

* * *

Some of the lease brokers tell us that things are looking up a little, with the advent of warm weather and the dearth of excitement in the Seminole country. The latter fact has more to do with the improvement than does the warm weather. For going on three years the big buyers of acreage have poured most of their money into the Seminole territory. They were only slightly interested in anything else, except, of course, the dollar-an-acre wildcat stuff miles away from production, which they buy in season and out. Prior to Seminole they bought many leases near tiny pools. Now, with no major excitements in the Seminole territory, they are beginning to look over the old territory once more—to consider leases in territory fairly well defined, geologically. They are also spending more money on the extreme wildcat areas and the price is rising. Northwestern Oklahoma and western Kan-

sas are getting a big leasing play and have been for some months.

* * *

Observed on the Sunday morning round: Al West, of the Marland Oil Co., whose golf clothes are quite snappy. Memo: Find out if his game matches his appearance.

* * *

The newly formed Oklahoma City Geological Society has elected Hubert E. Bale president; A. H. Richards, of the Ramsey Petroleum Corp., vice-president and R. W. Sawyer, of the Skelly Oil Co., secretary-treasurer. Weekly meetings will be held at the Oklahoma club, with one meeting a month to be of technical nature.

* * *

L. E. Phillips, chairman of the executive committee of the Phillips Petroleum Co., is the commencement day speaker at the University of Tulsa.

* * *

Died: In New York City, J. A. Twitchell, of Pittsburgh, Pa., member of the producing firm Twitchell & Meyers. The firm has been active in the Mid-Continent. He was 73 years old.

* * *

Died: In Paris, France, Mrs. Glenn T. Braden, widow of the late founder of the Oklahoma Natural Gas Corp. Mrs. Braden was touring Europe when she was attacked by influenza. Two sons, William R. and Charles E., both of Tulsa, and a daughter, Mrs. Allen M. Cullum, of Reading, Pa., survive. Braden interests include steel, real estate and oil, in Tulsa and the Mid-Continent. Glenn T. Braden died in 1923.

* * *

Died: In New York City, Fred H. Wickett, one-time president of the Dixie Oil Co. and later head of the Pan-American Petroleum & Transport Co., aged 60. His widow and three children survive, one of the sons being Kenneth L. Wickett, North Texas division manager of the Barnsdall Oil Co.

* * *

Ernest J. Nicklos, vice-president of the Marland Production Co., has been made a director and vice-president of the parent Marland Oil Co. Mr. Nicklos has led quite a busy life since he joined the Marland forces early this year. What with certain reorganizations that have been taking place, the merger with the Continental Oil Co. and the acquisition by the Marland of the Prudential Oil Co., Baltimore, and purchase of a controlling interest in the Texon Oil & Land Co., the new management of the Marland has not lacked for something to do. "Twenty-four hours of my time belongs to the company," said Mr. Nicklos. "The rest I can use as I please."

* * *

Three members have been added to the directorate of the Mid-Continent Oil Scouts and Land Men's Association. They are Henry Waters, chief scout of the Sinclair Crude Oil Purchasing Co.; John West, crude oil buyer for the Prairie Oil & Gas Co., and A. M. Kearley, Empire Companies.

* * *

Don V. Eells, refinery superintendent at Okmulgee for the Empire Oil & Refining Co., has been elected president of the newly formed junior chamber of commerce in Okmulgee.

* * *

Here is the current story about Tom Slick, who is "beating back," after selling out to the Prairie for something like thirty million:

"Well, this has been a dull day," said the famous wildcatter, as he prepared to leave his office one recent evening. "Only bought 17,000 acres today."

* * *

T. T. Eason, of Enid, has acquired full control and ownership of the Bolene Refining Co. and the Healdton Oil & Gas Co., through purchase of stock from T. L. Wade, D. M. and R. L. Montgomery, of Marlow, Okla., and J. D. Montgomery, of Enid.

* * *

After two months of wrestling with architects, contractors and the vast army of bottle holders, spear carriers and other supernumeraries that go along with building a new house, Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association, gave up the unequal contest and went away from here to restore his shattered nerves. The house, which gives appearance now of being a beauty, went along nicely without him and doubtless with no reference whatever to his own ideas.

Luther H. White

Chief geologist of the J. A. Hull Oil Co., has been elected a member of the Tulsa board of education. A product of Oklahoma, Mr. White has made an enviable name for himself in his profession. He has been prominent in technical societies and has contributed much to the literature on Mid-Continent geology

* * *

Battles over who is what continue among our middle western cities. The Wichita Eagle asserts that Kansas City is "trying to blackball Wichita out of the spotlight of publicity," by refusing to mention that Kansas' new oil fields are near Wichita. That's an interesting trick, although the mechanics of it are a trifle uncertain.

* * *

Add, Ho, Hum items: The new secretary of the interior announces that he intends to put the Indians to work.

* * *

The Petroleum Industry Electrical Association, whose membership is made up largely of pipe line men, will meet in 1930 in Dallas, it was decided in the annual meeting held in Tulsa. All officers were re-elected. F. J. McMahon, vice-president of the Texas Pipe Line Co., Houston, is president.

* * *

Ten Years Ago

(From National Petroleum News, May 28, 1919)

Merger of the two principal companies headed by H. F. Sinclair, the Sinclair Oil & Refining Corp. and Sinclair Gulf Corp., announced. New name to be Sholan Oil Corp.

Organization of Shaffer Oil & Refining Co., under sponsorship of H. M. Byllesby interests takes in oil properties of C. B. Shaffer including the Consumers' Refining Co., operating refinery at Cushing.

Preliminary move made to affiliate north Texas operators with Mid-Continent Oil & Gas Association in meeting at Fort Worth.

Marland Refining Co. increases capital stock from ten to 25 million dollars and announces refinery expansion plans.

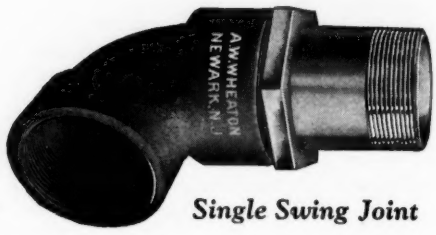
Charles Mercer resigns from Gypsy Oil Co. to become office manager of Sinclair Gulf at Forth Worth.

Magnolia offers Burkburnett crude at $2.50 per barrel, f.o.b. Electra. Posted price $2.25.

Best completion in Oklahoma is 800-barrel well at Garber.

Petroleum Refining Co. building 1000-barrel refinery at Latonia, Ky. Harry Deming is general manager.

And in SWING JOINTS, *too*—



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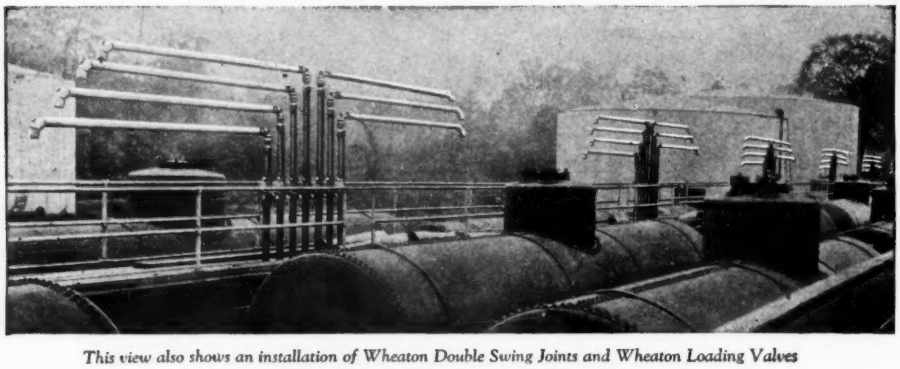

This view also shows an installation of Wheaton Double Swing Joints and Wheaton Loading Valves

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Several Tests Approaching Deep Pay In Oklahoma City Pool

By John Power
N. P. N. STAFF WRITER

TULSA, May 25

NEITHER the recent advance in crude oil prices nor the lifting of proration in Oklahoma has as yet had any visible influence on Mid-Continent field activities. There has not been enough time to start up any of the wildcats a crude advance usually fosters.

As for the Seminole area production, normal decline, plus the inadvisability of running compressors and the like at "potential day" speed in day to day operations, has prevented the district's average production from getting within 50,000 barrels daily of the amount used as the potential during the last proration period.

For the week just past, there were in Oklahoma 102 wildcat drilling wells, a wildcat being defined as a location two or more miles from production. This compares with 116 such wells on Jan. 1.

In Kansas, 137 wildcats are under way at the present time, against 112 Jan. 1. One reason for the increase in Kansas has been the discovery of the Valley Center pool, in Sedgwick county, which, together with several strikes of as yet lesser importance in the western part of the state, has imbued all Kansas oildom with increased vigor.

Oklahoma is principally interested right now in the several wells fast approaching the deep pay in the Oklahoma City pool. Indian Territory Illuminating Oil Co.-Foster Petroleum Corp., drillers of the discovery well last December, are one of the closest to a deep completion. Their No. 1 Alice Bodine, SW NE SE 24-11N-3W, topped the Siliceous lime at 6110 feet and drilled to 6118 before shutting down to standardize. No oil or gas had made its appearance in the test at the time the well was shut down. Pay was found in the discovery well at 6353 feet. The No. 1 Bodine is a little more than a quarter of a mile northwest of the discovery.

Other wells in the pool which are rapidly approaching interesting depths are: the Mid-Kansas Oil & Gas Co. No. 1 Fortson, CSW NE of 24-11N-3W, cored from 6226 to 6237 feet with no showing in the lime; Coline Oil Co. No. 1 Olds, CSE NW 24-11N-3W, last reported drilling ahead after coring with a show of gas from 6057-72 feet; I.T.I.O.-Foster Petroleum Corp. No. 1 Trosper, which had the lime at 6118 feet and is coring ahead with nothing showing according to last reports from the field.

The state's youngest boom field, Asher, received something of a setback during the week just passed. Although Prairie Oil & Gas Co.'s south offset to the discovery well is an excellent producer, flowing better than 2000 barrels daily from the Viola lime, the Simms Oil Co. No. 1 Alexander, two locations north of the discovery, is drilling at 3657, still in the Woodford shale, which was topped at 3590.

This makes the well appear very much lower structurally than the discovery, which had the Viola lime, the producing formation, at 3640 feet.

On this basis, prospects for production in the wells to the north and northwest of the discovery do not appear overly bright. This is the direction of the townsite play, which got under way shortly after the Simms discovery proved itself a really important producer.

OTHER than the Oklahoma City and Asher areas, perhaps the most active spot in Oklahoma at the present time is in Twp. 7N-4E, just west of the St. Louis pool. Known as the Pearson Switch pool since its discovery about two years ago, the area has so far confined its production to the Hunton and Viola lime. Now, however, possibilities of Simpson and even Wilcox sand production appear as excellent. Several wells are already producing in the township from the Simpson, with one in particular being especially interesting.

It is the Independent Oil & Gas Co. No. 1 Rhodd, which is good for about 1200 barrels daily in the Simpson at 4012 feet. It is expected that the well will later be carried to the Wilcox, though present plans call for the erection of a gas lift plant to produce the well at its present level. The test is in the NW of 16-7N-4E.

About three quarters of a mile from the Independent well is another test which is to be completed as a Simpson producer. It is the Houston Oil Co. No. 1 Wyatt, in the NE NW SW of 17-7-4, which is producing at the rate of 1200 barrels daily from a total depth of 4233. It is to be shot and put on the air/gas lift.

Another area in the same township, although it contains one good well is apparently doomed to be a one-well affair. The well, Martin, Irwin et al. No. 1 Kelly, in 2-7-4, has shown itself good for close to 1500 barrels daily. Now, however, the offsets to the well are running so low structurally that little hope is held for their success. This particular play centers around the northwest 40 acres of the northwest quarter of the section.

Another area, which last week appeared on the horizon as containing a possible future field, came a cropper during the week. The wildcat test being put down by Reiter-Foster Petroleum Corp. in northwestern Payne county gave every indication of being a good well. After the first few minutes however, it quit flowing, and further drilling resulted in but one more small flow. The pay from which such oil came as did flow is now believed to second body of Misener, topped at 4837, and drilled to 4847. The well is to be deepened to the Wilcox.

The Texas Panhandle, particularly Gray county, appears in for considerable work. Several excellent wells have been reported from the Bowers Ranch area of the county. Magnolia Petroleum Co. has one of the best wells to date, its No. 4 Bowers in the SW of Sec. 63, Blk. B-2, H. & G. N. survey, being good for about 17,000 barrels daily. Pay was topped at 2889 feet.

Notes on the Week

NOT only has the Cromwell Oil & Gas Co. deep test in the SW NW NE of 15-12N-3W been officially labelled dry and abandoned, but the test has had to relinquish its title of Oklahoma's deepest well. The Indian Territory Illuminating Oil Co. No. 1 Cook, in the NW of 10-1N-11E, near Coalgate, Coal county, now carries that distinction. It is drilling at 7215 feet, in shale, 33 feet deeper than the total depth of 7182 feet reached by the well north of Oklahoma City. The latter was abandoned after getting water in the second Simpson series sand.

* * *

The general Seminole area continues to provide most of Oklahoma's

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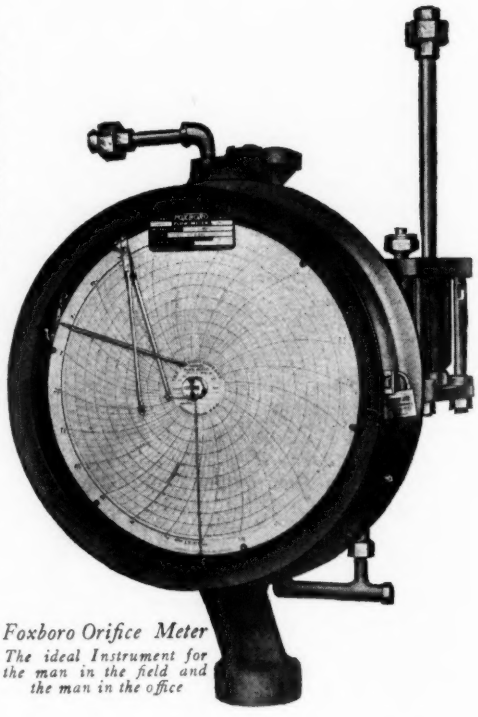

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field work. At present there are six locations, 11 rigs, 90 wells drilling at less than 3700 feet and 81 at more than 3700 feet in the district.

* * *

Out in Trego county, western Kansas, the Central Commercial Oil Co. has a wildcat which is attracting a lot of attention. Located in the NE SW SE of 20-13S-21W, the test is swabbing 10 barrels an hour from the Gorham sand topped at 3960 and drilled to 3972. Unless water shows up, the well will be deepened soon.

* * *

The Valley Center pool, of Sedgwick county now has 65 producing wells, with a total daily average production of more than 32,000 barrels. Of this amount the Gypsy-Marland-Bu-Vi-Bar interests, discoverers of the pool, have a little less than 20,000 barrels.

* * *

Seminole area's daily production continues to hang under 400,000 barrels. For the 24 hours ending 7 a.m. May 25, the entire district made 390,992 barrels from 1928 wells. This is about 6,000 barrels more than for the same period a week ago, when the district made 384,236 barrels from 1921 wells.

* * *

The performance of the Gypsy Oil Co.'s pool-opening well in southern Sumner county, Kans., is leading to some drilling just across the line in Oklahoma. Gypsy made location in Grant county, Okla., for No. 1 Gibson, NW NE of 17-29-4W and Amerada Petroleum Corp. made location for No. 1 Clark, in the NE NW of the same section. They are offsets.

* * *

Northwest Oklahoma has captured the fancy of oil men for some time and the tests now drilling there are closely observed. The really isolated ones, far from production, which now are getting down to levels where interest is keen, are as follows:

Sinclair Oil & Gas Co. No. 1 Share, CNE SW of 33-27-16W, Woods county, drilling at 2680 feet.

Bu-vi-bar Petroleum Co.'s No. 1, SE SW of 10-25-15W, Woods county, had 1000 feet of water in the hole at 4703 feet; set six-inch casing at 4750 feet; had show of gas at 5003-19 feet; hole full of water at 5019 feet; cemented six-inch at 5071 feet; drilling at 5195 feet.

Billy Oil Co. No. 1 Wyatt, CSE of 9-23-20W, Woodward county; set eight-inch at 3252 feet; drilling at 3690 feet.

Magnolia Petroleum Co.'s No. 1 School Land, CSE NE of 22-5-5E, Cimarron county, shut down at 3315 feet.

Gilmore Co. Buys 4 Gasoline Plants

TULSA, May 25.—The Forrest E. Gilmore Co. has purchased the gasoline plants and properties of the Cushing Refining & Gasoline Co., according to an announcement made public May 25. Purchase price was not made public.

The purchase includes four plants, located at Blackwell, Ripley, and in the St. Louis and Little River fields, and the acquisition of 75 leased tank cars, together with additional acreage and gas reserves in the South Little River and Cushing territories.

The Gilmore company since the first of the year has been engaged in an extensive expansion program. The purchase of the Cushing properties increases the gasoline output of the Gilmore company 50,000 gallons a day.

Officials of the company estimated that by July 1 the natural gasoline production of the Gilmore company will be approximately 100,000 gallons daily. At the present time the production is estimated at 85,000 gallons daily. The company has constructed and developed 12 natural gasoline plants in Oklahoma and Texas.

Pipe Laying Started On Line to Atlanta

TULSA, May 25.—Laying of pipe for the Southern Natural Gas Corp.'s big gas line from the Monroe district of Louisiana to Birmingham and Atlanta has been started, according to P. McDonald Biddison, Monroe, La., who is consulting engineer on the project.

The first work is being done by Williams Brothers, of Tulsa and the Oklahoma Contracting Co. The Williams firm is starting on the Monroe end and the Oklahoma company at Yazoo City, Miss. Both are working eastward. Additional contracts for construction will be awarded soon.

The line is backed by the financial house of Ohrstrom & Co., New York, who control the Oklahoma Natural Gas Corp. and other public utilities. Ford, Bacon & Davis are the engineers in charge of construction. The promotion of the project was handled by R. C. Sharp, of Tulsa, former president of the Oklahoma Natural.

The distance from Monroe to Atlanta is 450 miles and this is a direct route through Birmingham. With branch lines which will be built, total length of lines will be 850 miles as this year's program. Such cities as Columbus, Miss., Tuscaloosa, Ala., Gadsden, Ala., Rome, Cartersville and Cedartown, Ga., will be supplied with gas conveyed through lateral trunk lines. The markets to be served will be both industrial and domestic.

The trunk begins at Monroe field end with a 20-inch line, joining at Pioneer, La., with an 18-inch line from the Richland field. From Pioneer to Birmingham the line will be 22-inch and from Birmingham to Atlanta will be 20-inch. Part of the line will be welded and part coupled. The Mississippi River crossing will be made with ten 10-inch lines. Other crossings of principal streams will be made with three 14-inch lines.

Little swamp country will be encountered along the course of the line, although some soil conditions along the way are bad, calling for careful coating of the pipe. Prior to the beginning of construction, aerial survey was made of the entire route by the Edgar Tobin Aerial Surveys, San Antonio, Texas.

J. H. White, formerly of the Semet Solvay company, is general manager of the Southern Natural, with headquarters in Birmingham.

Export Petroleum Assn. Formally Announced

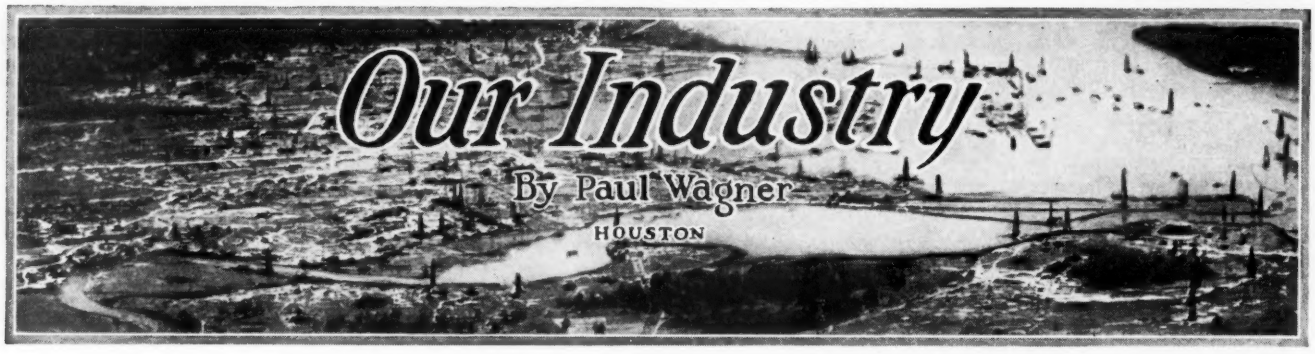
WASHINGTON, May 27.—The Federal Trade Commission formally has announced the creation of the Export Petroleum Association, Inc. under the Webb-Pomerene export trade act for the exportation of petroleum and its products. The association will maintain offices at 67 Wall street, New York.

The Webb-Pomerene law grants exemption from the anti-trust laws to an association entered into and solely engaged in export trade, with the provision that there be no restraint of trade within the United States. The statute was enacted to enable Americans to form trusts for export trade able to meet the trusts and cartels promoted and encouraged by foreign governments.

Officers of the corporation are: Gilbert H. Montague, vice president and John Knight Holbrook, Jr., secretary.

Members of the association are Atlantic Refining; Gulf Refining; Cities Service; Shell-Union Oil; Sinclair Consolidated; Standard Oil Export; Standard of New York; Tidewater-Associated; Texas Corp.; Vacuum Oil; Richfield Oil of California; Union Oil of California; Standard of California; Marland Oil, and Standard of Indiana.

Filing of the papers and acceptance of the terms of the export trade act constitute the acts bringing the association into legal existence.



The York-Smullin Oil Co. has moved its Whittier, Calif., office to Santa Fe Springs to be in closer contact with its development work. W. S. (Bill) Smullin, formerly identified with Standard Oil Co. activities and at one time a vice president of Humble Oil & Refining Co., Houston, is a principal in the company.

* * *

W. F. Travers of Long Beach is drilling a wildcat test well about two miles due south of the West Coyote Hills field in the Los Angeles Basin. The test is at Santon Avenue and Ninth Street, in 36-3-11.

* * *

D. E. Byers, Walter J. Richards and A. H. Trester have incorporated the Byers Petroleum Corp. to operate in the Redondo area of the Los Angeles Basin.

* * *

Herbert R. MacMillan, president of the Los Angeles company that bears his name, was a lawyer before he entered actively into the oil business. He is president of the Herbert R. MacMillan Co., and general counsel and director of the MacMillan Petroleum Corp., an affiliated enterprise. For nearly four years he has been personally engaged in producing oil at Signal Hill (Long Beach) and more recently has begun drilling in the Santa Fe Springs district of the Los Angeles Basin. MacMillan Petroleum Corp. also owns properties and a refining plant in the Smackover district of southern Arkansas.

* * *

California and Texas promoters have vied with each other to think up ingenious schemes for extracting shekels from the pockets of speculators. Here is a new one, hatched in California and applied to Texas acreage, as told by W. D. Abel, chief engineer of the California State Corporation department:

A company purchased 640 acres of land in Texas, about 10 miles from nearest oil production. It proposed to sell parcels of one acre each at $300, approximately one-half of the sum to be invested in building and loan certificates that would mature in about 10 years, paying at that time $300 to the investor.

Upon issuance of a deed to the land the company would take back from the new owner an oil lease carrying one-eighth royalty. One-twelfth of the $300, or $25, would be used in drilling a wildcat test for oil on some part of the 640 acres, and the balance of $125 an acre would go to cover sales expense of the promoter, original cost of the land and profits.

A similar case cited by Mr. Abel was the sale of 676 interests at $100 each in a 40-acre tract in the Antelope Valley of California, where oil development is speculative. The number of interests sold and the price paid for them would bring the promoter $67,600, while the maximum price of good alfalfa land in the area is only $100 an acre or $4000 for the tract.

* * *

B. H. Barnes of the Regan Forge & Engineering Co., San Pedro, Calif., represented his firm in Texas and Oklahoma before his transfer to the Pacific Coast a year or two ago. Mr. Barnes was succeeded at Dallas by D. A. Cant, who operates his office under the name of the Regan Sales Co.

B. H. Barnes

"Tex" Crawford is now making headquarters at Wink camp of the Humble Oil & Refining Co., in Winkler county, West Texas, scouting the northwestern part of the Permian salt basin producing area. He was formerly scout in the Shreveport, Louisiana, district.

* * *

John W. Mashaw, formerly identified with Associated Oil Co., San Francisco, as a petroleum economist, organized the statistical detail of California prorating as an assistant to Umpire F. C. van Deinse. Mr. Mashaw oversees the work of a corps of Statisticians who are kept busy from one semi-monthly prorating period to the next. Mr. Mashaw was engaged in fuel survey work for the United States Bureau of Mines on the Pacific Coast before his connection with the Associated.

* * *

The recently announced transfer of James A. Bermingham from Denver to the Los Angeles offices of The Texas Co. of California has been followed by his election to a vice presidency. Clarence E. Olmsted is vice president and general manager; Mr. Bermingham is vice president in charge of production; and L. R. Holmes, formerly of Houston, is refinery vice president.

* * *

Senor Gersin de Faria Alvim, Brazilian geologist and mineralogist of Rio de Janeiro, has been inspecting Tampico district fields and studying oil structures. Brazil, which has never been exploited for oil, is larger in area than other countries of the world except the old Chinese Empire, Russia and the United States. It contains about 49,000,000 inhabitants.

* * *

George A. Sharples is now advertising manager of Baker Oil Tools, Inc., Huntington Park, Calif., formerly known as the Baker Casing Shoe Co. At one time he was connected with the business department of the Curtis Publishing Co., Philadelphia, before entering advertising on his own account.

* * *

An Oklahoma City interest now operating on the Pacific Coast is the Buttram Oil Corp., of which Frank

Buttram, widely known geologist and engineer is president. His brother, William A. Buttram, is in charge of Los Angeles offices in the Subway Terminal building.

* * *

William Guice, widely known in Rocky Mountain territory, is now connected with the California executive staff of Continental Oil Co., making headquarters in Los Angeles.

* * *

"Cy" Bell, formerly general superintendent of production of the Standard Oil Co. of California, before entering business for himself six or seven years ago, divides his time between drill contracting and handling the Perkins process for oil well cementing on the Pacific Coast. Bell was the contractor on the Marland Oil Co. of California discovery well at Seal Beach. He is widely known in Texas and other part of the southwest, where he at one time operated as a contractor. Bell went through the old Jennings, Louisiana, development and drilled at Hoskins Mound, Gulf Coastal Texas, among other fields in the southwest.

* * *

S. Fischer, Jr., is now associated with the consulting engineering firm of Black, Fischer & Clough with offices in the Subway Terminal building, Los Angeles.

* * *

H. J. Craig, formerly Dominguez field storekeeper of the Union Oil Co. of California, is now in the purchasing department at Los Angeles. B. J. Conliffe succeeded him at Dominguez.

* * *

None will dispute that an accompanying group picture shows a great gang of California "wildcats." They derive their claws from membership in the "wildcat committee" of the California Oil & Gas Association, formerly known as the Chamber of Mines and Oil, Los Angeles. The "wildcat committee" sponsors entertainment features of the association work. In the group are shown from left to right, Art E. Wallace, in charge of development work of the Western Gulf Oil Co., Pacific Coast subsidiary of the Gulf Oil Corp.; Clarence E. (Curly) Olmsted, vice president and general manager of The Texas Co. of California; Harry A. Kassebaum, sales manager, Elliott Core Drill Co.; and Col. F. E. Foster, who represented the bankers in the reorganization of the old Julian Petroleum Corp. into the newer Sunset Pacific Oil Co.

* * *

In forwarding his autographed picture for the "rogue's gallery" of the conductor of this column, Major Frederick Russell Burnham, president of the Burnham Exploration Co., Los Angeles, commented:

"When an old horse was no longer useful it was the custom to feed him as bait to the crows, so the hunters could shoot them. Now that I am off again to Africa I might set an example for other old men to go into the jungle and act as lion bait to the modern camera man.

"So, bye and bye if you see some startlingly interesting lion or Simba pictures you may account for the gentle and pacific look of Simba from the fact that I shall be resting inside him."

Major Burnham and son, Roderick, together with their wives and Roderick's daughter, sailed May 12 for Melbourne on their way to Cape Town and other points in South Africa, where the Major will study wild life and Roderick will operate the motion picture cameras. A detailed discussion of their proposed trip appeared in the May 8, 1929 issue of this periodical.

* * *

W. L. Walker is now in California on special service for the Cities Service Oil Co., a Henry L. Doherty organization. He was formerly chief geologist of the subsidiary Empire Companies at Bartlesville.

* * *

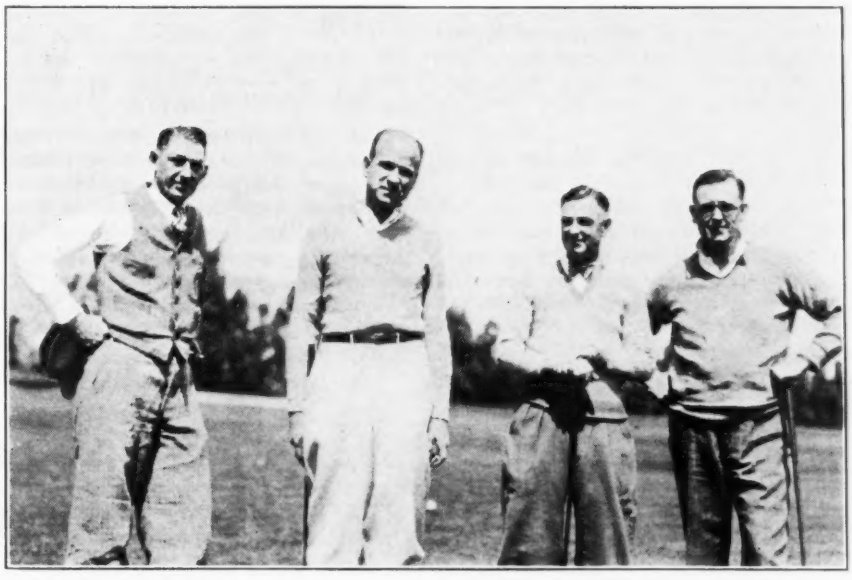
John J. Durst, manager of the Oil Well Supply Co., at Denver, doesn't like to write letters he can avoid, or even to dictate them. That is the reason that he never overlooks an opportunity to take a verbal jab at NATIONAL PETROLEUM NEWS when one of its representatives passes his way.

Several years ago, Durst supplied this periodical with certain pictures of what has come to be known as the "ice cream well" in Rocky Mountain territory. It was a curiosity of the first rank, the spew from the casinghead resulting from the tremendous pressures encountered by the drill.

After publication of the pictures in connection with a featured article in NATIONAL PETROLEUM NEWS, Durst's mail was liberally cluttered with requests from advertisers and others for pictures of the well. That's his weakness now.

* * *

Sale of the Pure Oil Co.'s properties in Winkler county, West Texas, to Lion Oil & Refining Co., with El Dorado, Ark., headquarters, has affected field personnel only to the extent that members of the operating group are now on a new payroll. H. H. Brewster of Odessa continues as district superintendent of production and A. A. Goodman as his assistant. Both will work with M. E. Wilson, vice-president in charge of production, who recently resigned from the Louisiana Oil Refining Corp., Shreveport, to head the Lion's field activities.



Art E. Wallace, C. E. Olmsted, H. A. Kassebaum, Col. F. E. Foster

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A. E. Willig has been appointed chief engineer of the Central North Texas division of The Texas Co., with headquarters at Cisco. He succeeded C. B. Williams, now superintendent of the combined Moran and North Ranger districts, which hereafter will be known as the Cisco district. The southern part of the old Ranger district is to be known hereafter as the Coleman district. It is in charge of E. F. Parks, with headquarters at Rising Star.

* * *

Charles H. Row is president of the recently organized San Antonio Geological Society. R. F. Schoolfield is vice-president and Kenneth Owen is secretary-treasurer.

Wildcat Near Santa Barbara Comes In for 1400 Bbls.

LOS ANGELES, May 24

BARNSDALL-RIO GRANDE interests appear to be in line for some more of their usual good luck, if indications at the Olympic Refining Co.'s well on the Mesa within the city limits of Santa Barbara are worth anything.

More than a year ago the Barnsdall-Rio Grande combine took leases on two pieces of property on the Mesa, one for 48 and the other for 43 acres. In return for five acres of one of these tracts the Olympic agreed to sink a wildcat well. This test well came in a few days ago for an initial production of 1400 barrels from a depth of 2245 feet, with 70 feet of oil sand.

Because the existing storage of two 1500-barrel tanks was quickly filled, it was found necessary to kill the well while more storage was being built. The well has plenty of kick, having a casing pressure of 750 pounds and a tubing pressure of 250 pounds.

Geologists predict that the new field, apparently another uplift on the Vaqueros formation, which is approximately 20 miles south of the Elwood field, will be restricted in area, as the structure at this point is quite narrow and, for this reason, production from this field is expected to fall short of that from Elwood.

Flush production from the O'Connell and Clarke sands at Santa Fe Springs continued to hamper curtailment plans. Six completions and three recompletions added 41,460 barrels of new oil to the production from the deep zones. Natural decline and curtailment accounted for 6000 barrels, making the increase for the field 35,460, to give a total of 179,315 barrels.

The productiveness of the O'Connell zone is becoming more evident with every completion. Eight of the nine new wells are producing from this zone and possibly part of the underlying upper Clarke. They have an average production of 5827 barrels. The ninth well is the initial producer from the lower Clarke for 1670 barrels.

The Texas Co. obtained the prize wells for the past week at Santa Fe Springs, with the completion of its Standlee No. 4 from 6660 feet for an initial production of 11,800 barrels of 33.5 A.P.I. gravity oil.

Wilshire Annex brought in its Koontz No. 4 from 6800 feet for 8780 barrels and St. Helens Oil Co. added to its production by completing Hill No. 1 for 8075 barrels from 6519 feet.

These wells are located near the center of the field and appear to indicate that a new peak may be reached soon through the completion of 22 wells now drilling and 13 preparing to cement in the O'Connell zone, notwithstanding the effect of proration plans.

What appears to be a race for new deep sands is being conducted by Associated Oil Co. and Richfield Oil Co. in the Santa Fe Springs field. Associated's Clarke No. 2 is coring ahead at 8000 feet in brown shale and streaked oil sand. Its Dallugge No. 7 is plugged back from 7850 to 7790 feet and a cement job will be attempted at 7590 feet. It is proposed to core a reduced hole and set the water string in this tight hole before cementing. Richfield Oil Co.'s Elliot No. 2 is in oil sand at 7688 feet after having cemented 4¾-inch casing at 7611 feet. Present inten-

At the left a joint test being drilled at Mussel Rock with the Rincon field in the background. The California coast highway runs at the foot of the cliff through the Rincon field. Companies owning land on the beach above the Rincon field combined in the drilling of the test at Mussel Rock

tions are to complete this well at 7800 feet.

Seven completions and recompletions added only 4656 barrels at Long Beach. Otis Hoyt No. 2 was the largest producer for the field, with 3540 barrels from 6945 feet.

Total production from the 888 Signal Hill producing wells was 182,459 barrels. Production from the lower sands by 365 wells was 130,576 barrels, as compared with 131,554 barrels for the previous week. This reduction is due to natural decline, rather than to curtailment plans.

Richfield Oil Co. has cemented its Hobson Fee No. 1 at Rincon through perforations at 7285 feet, bottom of hole being at 7449 feet. Circulation was established in this well by flowing down the 7-inch casing and up the 4-inch. This is a practice that is successful about one time in a hundred, according to engineers.

Drilling in the lower San Joaquin Valley has been on the increase during the past week. The Purman well in the Fellows area, northwest of Taft, is to install new equipment for deeper drilling to overcome the heavy gas pressure. Hancock Oil Co. has obtained permits for 640 acres at Elk Hills and intends to start operations in the near future. This tract is in Sec. 6-30-23, one mile north of the Naval Reserve.

Bolsa Chica is down 3528 feet and Shell Oil Co. is rigging up on its McClannan No. 1 in Sec. 1-25-19 in the Kettleman Hills area. Ohio Oil Co. is down 5350 feet in its Smith No. 1 in the south dome of Kettleman Hills in Sec. 35-24-19.

Very little additional activity has been shown in other California fields. Huntington Beach operators have decided to delay, for the present, efforts to find deeper sands, and thus cooperate in present proration plans.

Tentative Drilling Plan For Kettleman Hills

LOS ANGELES, May 25

THE committee of seven representing operators and permittees of the Kettleman Hills field met May 24 with Umpire van Deinse to decide upon a development plan to submit to the chairman of the general conference of operators.

The plan as now adopted will provide for the drilling of wells necessary to protect the rights and equities of all parties in the North Dome of Kettleman Hills. All wells so drilled are to be allowed to produce for about six months only such oil as will be necessary to validate permits and to assure leases to those who may be entitled to them.

The plan really passes the burden of curtailing production in this field on to the government, inasmuch as operators desire to produce only sufficient oil to enable them to meet their lease requirements and will agree to shut in their production until demand warrants an additional output. Another committee—appointed by Dr. George Otis Smith, Director of the U. S. Geological Survey, to study the ways and means of conserving gas at the Milham well on the North Dome of Kettleman Hills—has forwarded its report to the Secretary of the Interior. Dr. Smith will return to Washington on May 28 to present his findings to Secretary Wilbur.

It is generally understood that this committee is in favor of permitting the completion of several wells offsetting the Milham producer, which would automatically reduce the pressure of that well and thereby allow it to be brought safely under control.

The following is a summary of a statement made by Dr. Smith regarding the attitude of the government toward the present situation in California:

The oil industry is getting into step with the music played by the administration five years ago. There is just as much harmony in the march that the Federal Oil Board is now playing as there was in that offered five years ago. However, the general run of the industry is still out of step.

An encouraging feature is that more of the leaders are in practical accord with the Washington viewpoint on the economics of the situation, but these leaders lack sufficient following to make their leadership effective. This is illustrated in the degree of success attending the efforts of Umpire F. C. van Deinse in California to enforce a proration program. The major companies appear to have given him the support he deserves, but some others seemingly think only of immediate profits and disregard the future security of their own market.

It is the desire of the Federal administration to defer the development of the Kettleman Hills field until the flow of oil from these three promising domes is needed by the California crude market. The majority of the interested companies, and by far the larger interests in the potential production in this area, line themselves up with Secretary of the Interior Wilbur in his efforts to help both the industry and the public.

The government is interested both as a land owner and as a representative of the consuming public. Practical conservation is nullified in this field by the will of the minority. Public need and the common good of the people are factors not recognized by the extreme individualists of the oil industry.

In regard to existing condition at Kettleman Hills, Dr. Smith received word from Secretary Wilbur May 17 that, until present negotiations reach a conclusion, Kettleman Hills gas and oil permits, assignments, applications for extension of time, applications for leases, notices of intention to drill, etc., shall be held in *status quo*.

Some operators in this field are of the opinion that this order is unfair, in that it does not permit them to offset wells that will within a short time be on production, and consequently be draining their lands.

Input Wells to Be Counted In Figuring Royalties

WASHINGTON, May 27.—An input well used for repressuring wells, on public lands, will be rated as a commercially productive well. That is the decision of Secretary Wilbur on a question that has bothered holders of leases from the government. Dr. Wilbur made the decision by approving a recommendation of the Geological Survey, which was as follows:

"Repressuring oil producing sands by injecting natural gas, air, or a mixture of gas and air, into the sand through wells selected or drilled for that purpose, though still in an experimental stage, is generally recognized in the industry as beneficial. The great benefit from repressuring lies in the probability that ultimate production from the sand will be increased and thus an additional portion of the natural oil and gas resources will be conserved for use.

"A question has arisen as to what consideration shall be given to wells through which gas is injected into the sand, customarily called input wells in computation of Government royalty. The sliding scale royalties are based on the average production per well. Consequently, the number of wells is a critical factor in royalty computation.

"I therefore recommend that you determine that input wells in repressuring operations are commercially productive wells within the meaning of the standard lease form."

Completions in Oklahoma and Kansas, Week Ended May 25, 1929

OKLAHOMA

Coal County

Company	Well No.	Location	Depth	Init. Prod.
Galbreath et al	1	SWc SE 24-1-9 E	T.D. 3350	Dry

Cotton County

Company	Well No.	Location	Depth	Init. Prod.
Heydrick et al	1	NW NE SE 18-3-11 W	T.D. 2502	Dry
Pearce-Brown	1	NWc 31-2-12 W	T.D. 2716	Dry

Hughes County

Company	Well No.	Location	Depth	Init. Prod.
Indep.-Mid-Cont.	1	SEc 31-9-9 E	3545-3554	120

Jefferson County

Company	Well No.	Location	Depth	Init. Prod.
Beck	3	SWc SE SW SE 34-6-5 W	1232-1242	50

Latimer County

Company	Well No.	Location	Depth	Init. Prod.
LeFore County	1	SWc NE NE 11-6-22 E	1621-1790	8M

Logan County

Company	Well No.	Location	Depth	Init. Prod.
Shell	3	SE NE NE 19-19-4 W	6081-6087	2200

McClain County

Company	Well No.	Location	Depth	Init. Prod.
Tidal	1	C SE SE 31-5-2 E	T.D. 5290	Dry

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Irelan et al	1	SEc NE NW 32-11-11 E	3028-3036	2¾M
McMahon	3	SE NW SE 29-12-10 E	2948-3164	10M
Josey	21	SW SE NW 33-12-11 E	3632-3669	125

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Jackson-Wise	9	SWc 3-15-11 E	2186-2203	20

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Continental	2	SWc SE 31-24-9 E	2120-2143	75
I. T. I. O.	2	NEc SW SW 28-23-9 E	338-361	¼M
Oliphant	2	NE NW NE 6-23-9 E	2260-2295	15

Payne County

Company	Well No.	Location	Depth	Init. Prod.
Texas	2	SWc SE 32-18-5 E	3742-3660	40

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Swift-Rush	2	NW SE NW 35-20-9 E	1985-2018	140
Nadine	5	NE NW NE 7-20-8 E	1965-1991	1¼M

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Loual Drlg	1	SEc NW 36-5-7 E	2274-2281	35

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	2	SE NW SE 24-7-4 E	4230-4282	400
Gypsy	1	NW SW SE 23-7-4 E	4255-4283 980	OWD
Sinclair	3	SW SE SW 7-8-5 E	4150-4189	225
Phillips	2	NWc SW 17-8-5 E	4088-4110	25
Amerada	3	NE NW NW 20-8-5 E	4154-4160	175
Magnolia	5	SE NE SW 20-7-5 E	4235-4291	300
Skelly	1	SW SE NW 17-8-5 E	T.D. 4392	Dry

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
Amerada & Burke-Greis	1	SE SW SE 23-9-5 E	T.D. 4365	Dry
Barnsdall	2	NW NE NE 5-9-6 E	4155-4225	23
Empire	6	NE NW SE 11-8-5 E	4173-4184	475
Magnolia	2	NWc NE 11-8-5 E	4460-4462	1000
Shaffer	3	SE NE NE 12-8-5 E	4343-4352	520
Twin State	2	NW SE NE 12-8-5 E	4204-4209	400
Minnehoma	4	SW NW NW 7-8-6 E	4264-4267	140
Carter	3	NE SE NW 26-7-6 E	3121-3129	20M
Independent	2	SE NE NE 27-7-6 E	3161-3168	90

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Shell	4	NWc NE SW 30-1-8 W	2262-2270	35
Magnolia	23	NEc NW NE SW 34-1-8 W	1853-1862	200
Magnolia	4	NEc SE 13-2-8 W	1423-1439	30

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
Newman	2	NWc SW 18-17-17 E	1068-1085	3.5M

KANSAS

Butler County

Company	Well No.	Location	Depth	Init. Prod.
Empire	77	NW NE SE 19-26-5 E	2546-2628	100
Empire	78	NE NW SE 19-26-5 E	2552-2637	100
Patton et al	1	NWc SE 33-24-3 E	T.D. 3413	Dry
Phillips	1	NW SW NW 23-27-5 E	T.D. 3252	Dry

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Hartman-Skaer	1	SWc NW 13-33-3 E	T.D. 3775	Dry
Hull	19	SE NE NE 24-32-4 E	2960-3040	120
Kentucky Nitro. & Oxyg.	1	CEL SW SW 7-33-7 E	550-556	.7M
Shawver et al	1	SW NW NW 16-34-3 E	3334-3336	20

Ellis County

Company	Well No.	Location	Depth	Init. Prod.
Davis-Hazlett et al.	2	NW NE NE 1-13-16 W	2992-3005	95

Harvey County

Company	Well No.	Location	Depth	Init. Prod.
Empire	1	SWc NE NE 19-22-1 E	T.D. 3556	Dry

Marion County

Company	Well No.	Location	Depth	Init. Prod.
Darby	3	SE NE SE 12-19-2 E	2805-2826	260
Tidal	1	NW SW SW 7-19-3 E	2841-2860	225

McPherson County

Company	Well No.	Location	Depth	Init. Prod.
Marland	1	C SW SW 9-21-1 W	T.D. 3564	Dry

Sedgwick County

Company	Well No.	Location	Depth	Init. Prod.
Lewis et al	1	NWc NE 23-27-2 E	T.D. 3336	Dry
Shell	1	SEc NE 15-26-2 E	3164-3174	2118
Vickers	3	NWc SW NE SW 6-26-1 E	3380-3383	525
Bu Vi Bar et al	6	NWc SE 6-26-1 E	3378-3382	25
Bu Vi Bar et al	3	SWc SE 6-26-1 E	3369-3376	325

Sherman County

Company	Well No.	Location	Depth	Init. Prod.
Hansen et al	1	NEc SW NW 22-7-40 W	T.D. 3150	Dry

Stevens County

Company	Well No.	Location	Depth	Init. Prod.
Trees	1	SW NE SW 3-35-38 W	T.D. 500	Dry

Completions in California, Week Ended May 17, 1929

Long Beach

Company	Well No.	Location	Depth	Init. Prod.
General Pet. Corp.	Ransome 1	....	6659	258
Lyons & Bourdo	Morgan 1	....	6963	475
Olympic Oil & Rfg. Co.	No. 15	....	5025	200
The Texas Co.	Harlow-Kent 9	....	7254	156

Santa Fe Springs

Company	Well No.	Location	Depth	Init. Prod.
Geo. F. Getty, Inc.	No. 25	....	6725	5800
Julian, C. C.	No. 15	....	7685	140
Standard Oil Co.	Koontz 10	....	5785	125
Standard Oil Co.	Walker 17	....	6485	1800
Standard Oil Co.	So. Whittier Comm. 21	....	6448	600
The Texas Co.	Steinly 4	....	6450	3500
Wilshire Annex Oil Co.	Koontz 4	....	6825	9000

Richfield

Company	Well No.	Location	Depth	Init. Prod.
Cont. Oil Co.	Winann 2	....	4600	170

Ventura Avenue

Company	Well No.	Location	Depth	Init. Prod.
Associated Oil Co.	Lloyd 72	....	6503	1310
Associated Oil Co.	Lloyd 73	....	7425	4085

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended May 25, 1929

OKLAHOMA

Carter County

Company	Well No. & Farm	Location	
Atlantic-Harris-McNeil	4-Eason	NW NE SE 19-1-3 W	
Magnolia	3-Johnson	NEc SE 32-1-3 W	
Magnolia	8-Hefner	SW NW SW 33-1-3 W	

Cotton County

Company	Well No. & Farm	Location	
Shasta	2-Chalmers	SWc NW NW SE 2-2-10 W	
Leath et al	1-Hundley	SEc SW 24-2-9 W	

Creek County

Company	Well No. & Farm	Location	
Wood	1-Langley	NEc SE 19-19-9 E	
Selby	5-Durant	NWc NE SE NE 18-16-9 E	
Carter	8-Durant	SWc SE NE NE 18-16-9 E	

Garvin County

Company	Well No. & Farm	Location	
Tidal et al	1-Halverson	C SE NE 8-4-2 E	

Greer County

Company	Well No. & Farm	Location	
Helmerich-Payne	1-	NW NW 23-6-24 W	

Jefferson County

Company	Well No. & Farm	Location	
Lee	1-Hotubbi	SEc NW 11-5-7 W	OWD
Johnson-Franklin	1-Sanders	SEc NW 10-4-8 W	

Latimer County

Company	Well No. & Farm	Location	
Limestone	1-Shaw	NWc NE NW 23-5-18 E	

Muskogee County

Company	Well No. & Farm	Location	
King	1-Humphrey	CSL SW NW 5-13-19 E	

Okfuskee County

Company	Well No. & Farm	Location	
Shelden	1-Wilson	NWc SW 22-12-11 E	
Josey	1-Stubblefield	SW NE NW 33-12-11 E	OWD

Oklahoma County

Company	Well No. & Farm	Location	
I. T. I. O	1-Fuzzell	SWc NW 19-11-2 W	OWD

Okmulgee County

Company	Well No. & Farm	Location	
Pine	1-Minich	CSL SW NW 18-15-13 E	

Osage County

Company	Well No. & Farm	Location	
Phillips	2	SWc NE NW NW 28-25-12 E	
Union Oil & Mining	1	SEc NW 32-23-10 E	

Pawnee County

Company	Well No. & Farm	Location	
Hay et al	2-Copeland	NEc SW SW 26-20-9 E	
Devonian	2-Copeland	NWc SE SW 26-20-9 E	

(*Continued on Page 47*)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended May 25, 1929

(Continued from Page 46)

Payne County

Company	Well No. & Farm	Location	
Magnolia	2-Jennings	NWc SW 10-18-5 E	

Pontotoc County

Transcontinental	1-Bolen	SE SW NW 19-5-5 E	
Belchie-Laskey	1-Crabtree	C NW SE 32-5-7 E	
Patsy	1-Johnson	SEc SW SW SE 31-4-7 E	

Pottawatomie County

Sinclair-McGraw	1-Kelly	NE NW NE 2-7-4 E	
Magnolia	3-Billington	NEc NW 22-7-4 E	
Cal Cul	1-Wilson	NW NE NW 9-8-3 E	
Wilcox	1-Perkins	SEc 12-6-3 E	
Magnolia	1-Coult	SWc NE 18-6-4 E	
Rush-Vaughn	1-Townlot	SW NW SE 18-6-4 E	
Skelly	1-Watson	SEc NW 18-6-4 E	
Texola	1-Townlot	SEc NW NE SW 18-6-4 E	
Commerce Dev	1-Townlot	NWc NE NE NW 19-6-4 E	
Mid-Continent	1-Causey	NW SW SW 20-6-4 E	
Magnolia-Gypsy	1-Smith	NWc NE 20-8-5 E	

Seminole County

Shell	1-Crump	SE NE SW 32-10-6 E	
Gypsy	4-Payne	SW SE NE 5-7-7 E	
Koonce	1-Townlot	SE NE NW 25-7-5 E	
Twin State	1-Marshall	SE SW NW 7-6-8 E	OWD

Stephens County

Franklin	1-Spain	SW SE NW 9-2-6 W	
Magnolia	10-Quackenbush	SWc SE 8-2-4 W	OWD
Franklin	9-Franklin	SE NW NE 24-1-4 W	
Amerada	4-Hanson	SE NE SW 12-1-4 W	
Trahan	1-Gunn	SW SE SE 34-1-9 W	

Tillman County

Razoe-Aikens	1-Grooms	C NW 10-1-17 W	

KANSAS

Butler County

Barnsdall	1-Henri	NEc NW 21-26-3 E	
Empire	16-Huston	SE NW SW 19-26-5 E	
Empire	9-Cranston	SW NW SE 22-27-5 E	
Empire	7-Hutchinson	SE NW NE 27-27-5 E	
Empire	3-Hutchinson	SE NW NE 34-27-5 E	
Branson et al	2-Ferris	SW SE NE 5-27-6 E	
Magnolia	2-Riggs	NW SW SE 4-28-6 E	

Cowley County

Edinfield et al	1-Wycoff	C SW SE 8-34-3 E	

Ellsworth County

Texas	1-Sherman	NEc SW 16-17-6 W	

Greenwood County

Alladin	1-Kirk	NE SE SE 10-25-8 E	

Lyon County

Sheedy et al	2-Hughes	NWc SW 19-21-10 E	

Marion County

Darby	4-Nickel	SW NE SE 12-19-2 E	

Osborne County

Phillips	1-Greive	NW SE NE 6-7-12 W	

Sedgwick County

Mars	1-Miller	SEc SW 2-26-2 E	
Shell	1-Borge	NW NE SW 14-26-2 E	
Ramsey et al	1-Mason	SEc SW SW 15-26-2 E	
Vickers	1-Devore	SE NE NE 16-26-2 E	

TEXAS

NORTH CENTRAL AND EAST CENTRAL

Brown County

				Survey
Beall-Gulley-Michel	1-Henslee	Blk-151		Curlong
Humble	1-Tewosen	Sec-11		HT&B
Humble	23-Hodnett	Blk-784		Harris
McClung-Hickory	1-Staggs	Blk-53		Thom
Owens	1-Henry	Blk-154		Ingram

Callahan County

Schaffner	4-Cowen	Sec-74	Comal Co. Sch. Ld.	
Condor	2-Windham	Sec-4 Blk-3		SP
Condor	1-Windham	Sec-343		Denton
Moutray	44-Hickman	Sec-149		BBB&C
Redmond et al	1-Chrans	Sec-9 Blk-6		SP
Moutray	17-Hatchett	Sec-24		D&DA
Texas	4-Hatchett	Sec-24		D&DA

Coleman County

Vacuum et al	1-Burnett	Blk-480		Johnson
Canyon	2-Keller	Sec-9 Blk-161		White
Page et al	1-Casey	Sec-3 Blk-657		Cochran
Owens et al	1-Milk	Blk-483		Woods
Stepp-Keister	3-Shore	Sec-72 Blk-1		GH&H
Cunningham et al	8-Jennings	Blk-94		Lipscomb

Eastland County

Conway Bros.-Champion	3-Simmons	Blk-27	McClenon Co. Sch. Ld.	
Root-Fehl	1-Balderree Heirs	Sec-62 Blk-4		H&TC
Kirk-Whiteside	2-Turner	Sec-30 Blk-2		H&TC

Falls County

Humble	1-Pusek	.....		Thurner
Kelliam-Phillips	1-Jones	.....		Hampton

Limestone County

Segal et al	1-Runnells	....		Santa
Smith-Donahue et al.	1-Oliver	....		Varella

Milam County

Bonwell-Hill	1-Booher	....		Welch
Burkhead	1-Weigman	....		Pollard
Chapman et al	1-Gilchrist	....		Acosta
Gronemann Bros	1-Dornheifer	....		Robertson
Rogers-Heap	1-Duncan	....		Acosta
Wray	1-Fowler	....		McFadden
Williams et al	1-Lee	....		Davis

Shackelford County

Combest	1-Mathews	Sec-30		ET
Gilman-McMurray	1-Mathews	Sec-2		ET
Albany	1-Reynolds	Sec-26 Blk-11		T&P
Texas Cons	1-Dyer	Sec-60 Blk-11		T&P
Roeser-Pendleton	3A88-Cook	Sec-88		ET

Stephens County

Swensondale	35-Swenson	Sec-3		OAL

NORTH TEXAS

Archer County

Lomax et al	1-Wilson	Sec-10		ATNCL
Kemrow	5-Campbell	League-3 Blk-1		DCSL
Rose et al	1-Campbell	Blk-11		Crawford
Humble	2-Kunkel	....		BBB&C
Pet. Prod. et al	3-Phillips	....		BBB&C
Moran Drlg. et al.	3-Scott	....		James
Texas Co. & Scott-Gose	1-Miller	Sec-20 Blk-2		ATNCL
Gywnn	2-Thompson	Sec-20 Blk-11		ATNCL
Archer Drlg	3-Thompson	Sec-20 Blk-12		ATNCL
Texas	3-Kemp et al.	Blk-67		KWVFL
Hammond et al	1-Parrish	Sec-98 Blk-1		ATNCL
Pace et al	1-Riggs	Sec-2		SP
Panhandle	1-Griffin	Sec-136		Lomar
Panhandle	1-Orton	Sec-2		SP
Burns et al	1-Wilson	Sec-94 Blk-3		ATNCL
Brown	3-Brown	....		SP
United Prod. et al.	1-Brown	Sec-105		ATNCL
Fain-McGaha	1-Taylor	Sec-17 Blk-11		ATNCL

Cooke County

Daniels et al	1-Harris	....	Harris
Texas	9-Dennis	....	Hutchinson
Comet	1-Huey	....	SP

Grayson County

Simpson-Fell	4-Wahl	....	Ingram
Murchinson	2-Wahl	....	Ingram
Simpson-Fell	1-Utiger	....	Cady

Wichita County

Gulf Prod	4-Mitchell	....	Lewis
Rowe et al	3-Waggoner	Sec-2 Blk-13	GC&SF
Panhandle	5-Burnett	....	Meade
Riner-Bailey et al.	1-Michie	....	Netherly
Heydrick-Stumpf	3-Boyd	Blk-11	Lewis

Wilbarger County

Lewis Prod	8-Waggoner	Sec-18 Blk-4	H&TC
Fain-McGaha	S-33-Waggoner	Sec-24 Blk-4	H&TC
Empire	B-11-Waggoner	Sec-32 Blk-4	H&TC
Empire	5-A-Waggoner	Sec-32 Blk-4	H&TC
Melot	7-A-Waggoner	Sec-10 Blk-4	H&TC
Melot	6-A-Waggoner	Sec-10 Blk-4	H&TC
Gray Back Dev	1-Waggoner	Sec-49 Blk-4	H&TC
Knight	A-2-Waggoner	Sec-40	MEP&P
Knight	A-1-Waggoner	Sec-40	MEP&P
Staley-Wynne	B-4-Waggoner	Sec-25 Blk-4	H&TC
Easter	A-5-Waggoner	Sec-26 Blk-4	H&TC
Lewis-Payne	3-Waggoner	Sec-17 Blk-4	H&TC
Goldine-Cockran	H-5-Waggoner	Sec-32 Blk-4	H&TC
Clark	2-Waggoner	Sec-25 Blk-4	H&TC
Knight	B-1-Waggoner	Sec-22 Blk-4	H&TC
Simpson-Fell	A-1-Waggoner	Sec-36 Blk-4	H&TC
Gray Back Dev	1-Bateman	Sec-15 Blk-4	H&TC
Phillips	NN-22-Waggoner	Sec-42 Blk-4	H&TC
Phillips	MM-6-Waggoner	Sec-30 Blk-4	H&TC
Consolidated	O-2-Waggoner	Sec-40	MEP&P
Gray Back Dev	3-Waggoner	Sec-10 Blk-4	H&TC

Wise County

Giles-Sewell	1-Smith	Blk-12	Beachamp

Young County

Cont.-Underwood	8-Campbell	Sec-1390	TE&L
Wise-Jackson	8-Calvin	....	Rohus
Pennell	1-Cox	Blk-18	YCSL
Robertson Drlg	4-Gilmore	Blk-14	YCSL
O'Bratcher	7-Edwards	....	Tynes
Edmondson	1-Johnson	Blk-3	Sergeant

PANHANDLE

Gray County

Danciger	1-Davidson	Sec-86 Blk-B-2	H&GN
Shamrock	3-Clayton	Sec-50 Blk-25	H&GN
Texas	2-Shaw	Sec-5 Blk-1	ACH&B
Danciger-Washoma	2-Smith	Sec-149 Blk-3	I&GN
Shamrock et al	1-Clayton	Sec-50 Blk-25	H&GN
Phillips	1-Morse	Sec-68 Blk-25	H&GN

WEST TEXAS

Crane County

Gulf Prod	64-McElroy	Sec-201 Blk-F	CCSD

Fisher County

Magnolia	1-Lee	Sec-357	Rodrigerez
Mid Kans	1-Stephenson	Sec-26	El Paso Co. Sch. Ld.

Howard County

McGinley-Seigler	1-Hyman	Sec-91 Blk-29	W&NW
Humble	3-Clay	Sec-138 Blk-29	W&NW
Amerada	10-Roberts	Sec-137 Blk-29	W&NW

Pecos County

McMann	6-Smith	Sec-25 Blk-194	TC
Mid Kans.-Transc.	9-Yates	Sec-32 Blk-194	TC
Mid Kans.-Transc.	6-Smith	Sec-31 Blk-194	TC
Southern Crude	T139 No. 1-Jackson	Sec-28 Blk-3	H&TC
Kone Prod	2-Pecos Valley	Sec-34 Blk-3	H&TC
Kone Prod	1-Pecos Valley	Sec-34 Blk-3	H&TC

Reagan County

Obenholtzer	1-Tally	Sec-6	GC&SF

Ward County

Atlantic-Delmar	2-Hazlett	Sec-17 Blk-5	H&TC

Winkler County

Southern Crude	T88P2-Hedricks	Sec-28 Blk-26	PSL
Skelly	2-Daugherty	Sec-22 Blk-26	PSL

Completions in Texas, Week Ended May 25, 1929

NORTH CENTRAL AND EAST CENTRAL

Brown County

Company	Well Farm	Survey Sec. & Blk.	Depth	Init. Prod.
Kerr et al	3-Boyson	Morllins	1594-1732	.6M
Zwiegal et al	1-Armstrong	H&GN	T.D. 1461	Dry
Owens et al	1-Turner	Duncan Blk-55	T.D. 1850	Dry
Culberson Bros. et al.	1-Suttler	Mitchell Blk-140	T.D. 2039	Dry
Baker,-Kynnard et al.	1-Mass	Gillespie	T.D. 1250	Dry
Lloyd	20-Collier	Smith Blk-139	T.D. 479	Dry

Callahan County

Moutray	41-Hickman	BBB&C Sec-149	680-703	6
Moutray	40-Hickman	BBB&C Sec-149	697-700	20
Moutray	43-Hickman	BBB&C Sec-149	708-714	20
Moutray	28-Flores	BBB&C Sec-149	772-774	5
Moutray	42-Hickman	BBB&C Sec-149	644-649	30
Moutray	16-Hatchett	D&DA Sec-24	388-426	25
Humphries	5-Gary	D&DA Sec-40	411-418	3
Moutray	9-Hatchett	D&DA Sec-23	T.D. 426	Dry
Gibson-Johnson	5-Snyder	BBB&C Sec-142	T.D. 1074	Dry
Belva	1-McGee	Vigal No. 798	T.D. 1801	Dry

Coleman County

Texas Pacific	2-Gay	Fisk Blk-630	T.D. 1395	Dry
Traxel	1-Wells	Martinez Sec-4 Blk-751	T.D. 1604	Dry
Geisendorf et al.	1-Witcher	Scott Sec-4 Blk-665	T.D. 1907	Dry
Canyon	1-Keller	White Sec-9 Blk-161	T.D. 402	Dry
Preston et al	1-Godwin	Faxel Blk-83	921-926	3

Comanche County

Texas Pacific	2-Kirk	D&DA Sec-18	2722-2735	10
Sawyer	1-Cagle	Sec-71 League-3	T.D. 2881	Dry

Eastland County

Gulf Prod	7-Kinnebrew	H&TC Sec-29	T.D. 3309	¼M
Mitcham et al.	1-Winge	H&TC Sec-70 Blk-3	T.D. 1563	Dry

Erath County

Snebold-White	1-Fillfer	Kelley	3205-3220	1½M

Haskell County

Edmiston et al.	1-Reynolds	Cattle Co. Roser Sec-94	T.D. 2040	Dry

Jack County

Panhandle	1-Liffel	Hughson	3090-3100	750
Panhandle	2-Smith	Hughson	3019-3060	80

Jones County

Sedgwick	1-Routh	Williams Sec-355	T.D. 3267	Dry
McGinley et al.	1-Martin	Weight Sec-13	T.D. 2018	Dry

Navarro County

Transcontinental	1-Derden	Est. O'Donnell	T.D. 3010	Dry

Runnels County

Union	1-Allen	HE&W Blk-1	T.D. 3874	Dry

San Saba County

Wilmont	1-Moore	Antonia et al. Blk-78	T.D. 3082	Dry

Shackelford County

Frizzell-Smalley	1-Mathews	ET Sec-56	T.D. 1279	Dry

NORTH TEXAS

Archer County

Cont.-Perkins-Cullum	1-Wilson	ATNCL Sec-114 Blk-3	1440-1448	7
Payne et al	3-Parrish	SP	1574-1581	96
Freeman-Grebin	5-Hennig	Meade Blk-21	1442-1443	38
Archer Drlg	2-Thompson	ATNCL Sec-20 Blk-12	1591-1597	44
Pet. Prod. et al.	2-Kunkel	BBB&C	1172-1186	60
Panhandle-Kruger	1-Tuberville	Carson Blk-170	T.D. 1575	Dry
Hutchinson	6-Hutchinson	ATNCL Sec-123 Blk-6	T.D. 1164	Dry
Humble	3-Hamilton	BBB&C Sec-6	T.D. 1254	Dry
Hart-McLaughlin Bros.	1-Stone	SP Sec-2	T.D. 1704	Dry
Estacaba	1-Ball	Nunley Blk-10	T.D. 832	Dry
Beavers-Rose	1-Hayter	TE&L Sec-2402	T.D. 1352	Dry
May Camp Drlg.	1-Prideaux	McMullen Blk-7	T.D. 647	Dry

Cooke County

Pure	7-Emby	Moss	1088-1202	40
Lloyd	1-Wheelock	Underwood	1311-1316	8

Grayson County

Simpson-Fell	1-Guilloud	Ingram	887-900	11.2M

Wichita County

Panhandle	4-Burnett	Meade Sec-6	T.D. 1440	Dry
Riner-Bailey	2-Michie	Netherly	1771-1791	250
Riner-Bailey-Cotton	4-Michie	Netherly	1773-1793	210

Wilbarger County

Nelot et al	5-Waggoner	H&TC Sec-10 Blk-4	1988-1998	75
Melot et al	2-Waggoner	H&TC Sec-10 Blk-4	1978-1987	120
Fain-McGaha	L-12-Wagg.	H&TC Sec-31 Blk-4	2326-2340	75
Fain-McGaha	L-10-Wagg.	H&TC Sec-31 Blk-4	2324-2380	10
Easter	C-2-Wagg.	H&TC Sec-25 Blk-4	1915-1924	200
Consolidated	O-1-Waggoner	MEP&P Sec-40	1852-1870	340
Clark et al	1-Waggoner	H&TC Sec-25 Blk-4	1888-1896	193
Burton	G-2-Waggoner	H&TC Sec-18 Blk-4	2341-2402	120
Staley-Wynne	R-1-Waggoner	H&TC Sec-26 Blk-4	1914-1925	105
Phillips	SS-4-Wagg.	H&TC Sec-43 Blk-4	2305-2325	85
Phillips	4-Waggoner	H&TC Sec-18 Blk-4	2402-2404	150
McMann	1-Waggoner	H&TC Sec-50 Blk-4	T.D. 2880	Dry
Gray Back Dev.	1-Waggoner	H&TC Sec-10 Blk-4	T.D. 2021	Dry
Texas	O-1-Waggoner	Fuller	T.D. 2572	Dry
Staley-Wynne	1-Waggoner	MEP&P Sec-40	T.D. 1898	Dry

Young County

Scott-Nace	2-Cooke	Rice	T.D. 2275	Dry
Wooten-Reed et al.	1-Vick	Splane	T.D. 645	Dry
Smith et al	1-Bentley	TE&L Sec-283	T.D. 854	Dry
Lloyd	2-Thomas	Addington	T.D. 540	Dry
Gifford	2-Prideaux	Rohus	T.D. 689	Dry
Callender	1-Hamilton	TE&L Sec-3401	T.D. 950	Dry
Steed-Gans	1-Snider	Wilson	T.D. 704	Dry
Wise-Jackson	8-Calvin	Rohus	624-632	7
Walton et al	5-Prideaux	Tynes	460-485	25
Walton et al	4-Prideaux	Tynes	495-499	15
Rathke-Panhandle	16-Prideaux	Rohus	596-601	20
Kinbrell-Lyles et al.	3-Dyer	Stroud	565-582	5

PANHANDLE

NOTE—Not Reporting

WEST TEXAS

Crane County

Gulf Prod	62-McElroy	CCSD Sec-201 Blk-F	2762-2892	420

Gaines County

Pure	1-Williams	D&W Sec-40 Blk-H	T.D. 4124	Dry

Glasscock County

California	1-Settles	W&NW Sec-158 Blk-29	T.D. 3417	Dry

Howard County

Marland	6-Clay	W&NW Sec-139 Blk-29	1810-1812	40
Empire	3-Clay	W&NW Sec-127 Blk-29	1750-1812	40
Cosden	4-Roberts	W&NW Sec-128 Blk-29	1274-1285	30
Amer.-Maracaibo	1-Settles	W&NW Sec-158 Blk-29	2925-2934	578

Irion County

Signol	2-Suggs	H&TC Sec-23 Blk-27	T.D. 3005	Dry

Upton County

Sun	1-Long	RTCO Sec-3	T.D. 2216	Dry

Completions in North Louisiana and Arkansas, Week Ended May 23, 1929

LOUISIANA

De-Soto Parish

(Frierson District)

Company	Well	Location	Depth	Yield
Thorn Oil Co	Burford No. 1	22-14-14	3020	Dry, abnd.

LaSalle Parish

(Urania District)

Ark. Nat. Gas Co.	Urania B-12	17-10-2E	1577	Salt-abnd.

(Little Creek District)

H. L. Hunt	Urania No. 8	2-9-1E	1500	150 bbls.

Morehouse Parish

(Dean District)

Nat. Gas Prod. Co.	Tensas Delta No. 14	4-22-4E	2240	1M gas

Union Parish

Nat. Gas and Prod. Co., Crossett Lbr. Co.	No. 24	25-21-4E	2237	2¾M gas

Ouachita Parish

(Monroe District)

Interstate Nat. Gas Co. Hunter-McCormick	No. 3	41-19-3E	2211	7M gas
Hunter-McCormick	No. 4	1-19-3E	2165	7¾M gas

Richland Parish

(Lucknow District)

Northern La. Gas Co.	J. H. Hemler No. 1	11-16-6E	2444	52M gas
S. C. Wilson	Buie No. 1	17-15-7E	1946	Dry-aband.

TEXAS

(Panola County)

Company	Well	Location	Depth	Yield
Nat. Gas Prod. Co.,	Floyd No. 5	B. C. Jordan HRS	956	4M gas

ARKANSAS

(Johnson County—Spadra District)

Ark. Nat. Gas Corp.	McPherson No. 1	10-10-24W	3455	9½M gas

(Ouachita-Stephens)

La. Oil Refg. Corp.	Manley No. 1	15-15-19	4502	Dry-aband.

(Ouachita—Mount Holly District)

Cumberland Pet. Corp. Co.	Burton No. 1	24-15-17	2937	Jnkd-aband.
Magnolia Pet. Co.	C. M. & K. Wilson No. 1	25-15-18	3100	Dry-abnd.

(Drew County—Hudspeth District)

Ohio Oil Co.	Jerome Lbr. Co	No. 1 13-15-4	3784	Dry-abnd.

(Bradley County)

Ohio Oil Co.	Sou. Lbr. Co.	No. 2 10-16-9	3510	Dry-abnd.

(Union County—Rainbow City)

Murdock et al.	Gregory No. 5	10-17-14	2797	20 bbls. oil

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LINE PIPE
STILL TUBES

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LINE PIPE
DRIVE PIPE
DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

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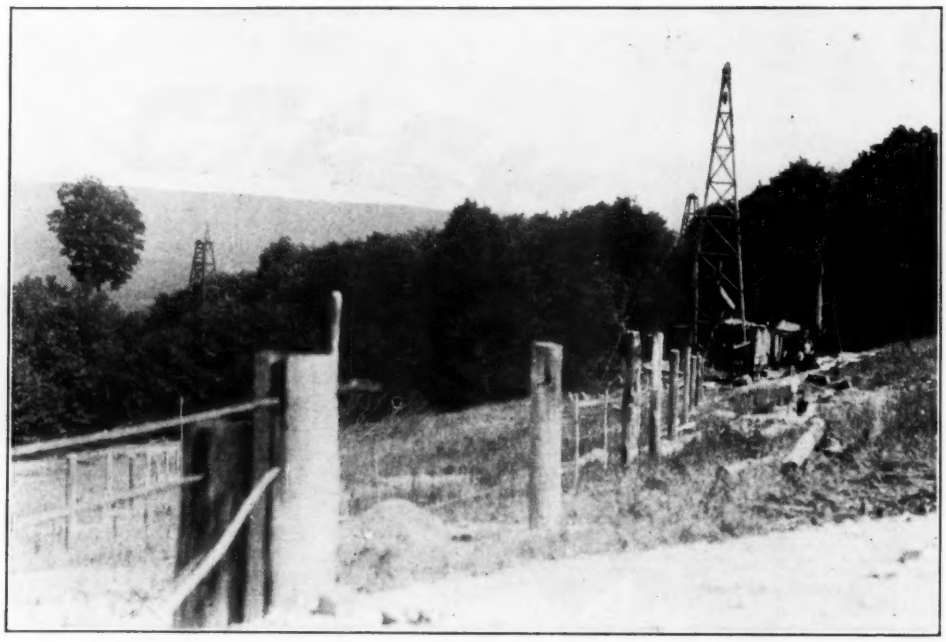

Typical development scene in the Bradford field

Water Drive In Bradford Field Speeds As Technique Improves

By Lawrence E. Smith
N. P. N. STAFF WRITER

BRADFORD, Pa.

TO ONE who has not seen the Bradford field for two years or so, the territory is new and strange. The operators' conception of the problem has been transformed so greatly in that time as to make for decidedly new technic.

Outstanding among the many changes that have occurred is the tendency to intensify the water drive —to shorten the time in which all the recoverable oil by this method is taken out. The reason for this is obvious and has been discussed fully heretofore. The more quickly the invested capital is returned, the less will be the interest charges.

In this district the outlay of money for intensive flood development is huge. It has been demonstrated to everyone's satisfaction that such large expenditures are necessary to obtain efficient results.

One finds in this district a considerable amount of trading. The very small operator, with limited holdings and consequent limited credit, is finding it to his advantage to sell to the larger producer. Gradually, and at increasing speed, the field is being concentrated in the hands of several large operators who are setting the pace in engineering, geological sub-surface work, use of the most modern and best equipment and who lay out comprehensive development programs for years ahead.

In the consideration of the district as a whole, it is found that the state of the market plays small part in planning development—that is, by the larger operators. Of course they are quite happy now. The market is posted at $4.10 and premiums are the rule rather than the exception. That is pleasing to the producer, although the refiner is suffering.

But the development programs that have been outlined and that are being set up every day will be executed whether the market holds or not. The ones who are carrying on the large programs of drilling and flooding base their set-ups on the average price for Bradford crude over a long period and they have a comfortable margin between that average and the present price.

A few years back, the Forest Oil Co., a leading producer in the district, began an intensive flood campaign based on a spacing of wells pattern called the line flood. Basically, this plan was to begin a flood program on a property producing naturally by drilling a row of water wells across the center of the lease or leases taken as the flood unit.

Along each side of the row of water wells a row of oil wells was drilled, the oil locations being staggered with respect to the water wells as illustrated in an accompanying plat. In time the water would reach the oil locations in quantity and these would be "dumped," or converted into water intake wells and other oil wells drilled in systematic pattern.

This would be repeated until the lease boundary would be reached. Originally, it was planned to deplete the oil locations in three years time, spaced as they were—generally, 150 feet from water to oil.

THAT plan was the first big move toward intensive flooding. It was merely a step, for today such spacing and system has been replaced by either "five spot" or "nine spot" patterns. The differences in the effectiveness will be discussed farther along in this article.

Another outstanding change in the flooding technic is in the manner of admitting water to the sand. Until

a comparatively short time ago, standard practice was to treat each water intake well as a unit, admitting fresh water direct into the oil sand from the stratum which underlies the field at depths of 200 to 400 feet below the surface.

Pressure wells would be equipped in the manner shown in an accompanying drawing. The water would be admitted to the oil sand through tubing, with packer set below the water stratum to prevent cavings from polluting the water.

Little attention formerly was given to the supply of water, measurements of the amount a pressure well was taking being taken irregularly or not at all. The result was that in many a case a property was condemned for flooding merely because there was not enough water.

A pressure well would be drilled, oil wells adjacent to it on one pattern of spacing or another, and if no gain in production occurred it would be assumed that for some reason the sand either possessed characteristics which prevented its taking water or was so poorly saturated as to make it useless as flood territory.

ALONG with the evolution of the present day methods has come the realization that scarcity of water was responsible for the failures in many and perhaps a majority of instances. The water supply of the field is merely ground water, replenished by snow and rain. It exists in different quantity on the tops of the hills, on the sides thereof and in the valleys. A broad valley will hold large quantities while on the hills the supply will be less. Water will be trapped by shales on the hillsides.

Instead of leaving it to chance, operators are now assuring a plentiful supply of water to all pressure wells by installing central pumping plants. Even where the water stratum at a pressure well location is known to be ample, the tendency now is to lift that water first to the surface and then admit it to the sand through tubing equipped, not with the open couplings as shown in the accompanying drawing, but with a recently designed flood valve that can be closed by turning the tubing, and will permit flooding with either subsurface water or from the top. This, in addition, makes it possible to shut off the water going into the sand if so desired.

Water intake well equipped with meter

It is modern practice now to install a meter at each pressure well and to note at regular intervals the amount of water each well is taking. A theory held by some operators is that, in general, each pressure well should take daily two barrels of water per foot of oil sand.

Of course all this means much greater expense. Water lines must be laid to locations, pumping plants installed, meters set and wells equipped for lifting the fresh water to the surface.

Let us take, step by step, the methods employed by an operator who is starting a new flood program. Assume that he is buying the property and that it is not a flood development. He first will obtain all possible information on the results obtained on nearby or surrounding properties that have been flooded. It is estimated that fully 80 per cent of the properties in the Bradford field and possibly 25 per cent of the acreage has been subjected to flooding. Hence, the purchaser of a property will be able to get enough information to guide him in his decision as to fair value.

He will be able to make a workable guess as to proper spacing of wells and probable recovery of oil. If any cores have been taken, he is so much better off.

The spacing program to be adopted will next call for study, as upon the pattern will depend the financial outlay. Curiously enough, the Bradford field has swung from the wide spacing used in the days of the old circle flood—when one water well was drilled and oil wells some distance

Water intake well covered for cold weather

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away—to the close spacing and now is tending to go back to wider spacing again, although in regular pattern, arrived at as scientifically as possible.

Programs now in effect in the field have distances from water to oil wells as low as 140 feet and as high as 225 feet with the trend toward the greater intervals. As one operator expressed it, those who are systematically developing the properties are acquiring more courage.

They are aided in their decision to drill the wells farther apart by the new information as to what can be accomplished with pressure. That capillarity is the chief agent in moving water through the sand is accepted as final, but it is demonstrated that a force imposed upon the column of water in a pressure well speeds the travel. This may be partly because the greater pressure overcomes gas at the bottom of the hole.

THE operator of the property will adopt one of two programs, as development is now being carried on. Either the "five spot" with an oil well in the center of the square and water wells at each of the corners, or the "nine spot" as shown on the accompanying plat, with an oil well between two water wells. The "five spot" is the pattern more generally in use now, although each system has its staunch defenders. The essential difference between the line flood and the others now used is the effect upon recovery and upon the outlay for drilling. The line flood, to be systematically carried out, called for the arbitrary conversion of a row of oil wells to pressure wells at a predetermined time. Some of the wells so converted might happen to be making considerable oil and promise to keep on producing for some time.

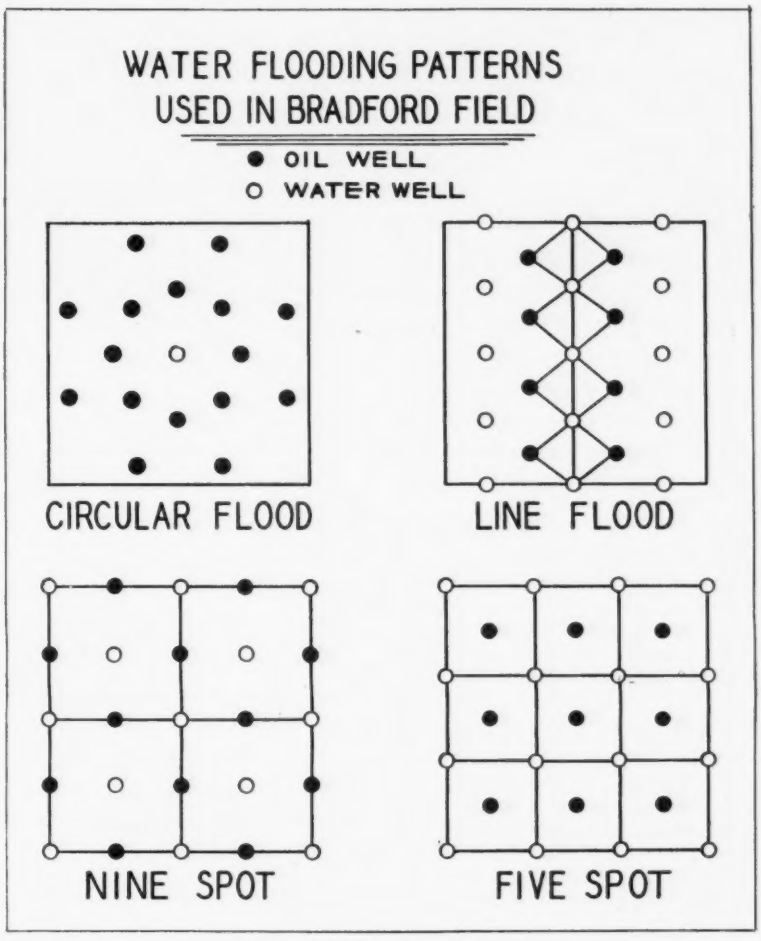
Unless the program were adhered to, the flood pattern would soon be as jagged and haphazard as the old circular flood; it would lose all regularity and subsequent locations would have to be fitted in wherever they could be.

Now, with the "five spot" or the "nine spot," it is obvious that the oil wells can be pumped indefinitely—just as long as they produce in paying quantity. The pattern is a permanent one; there is a four way drive from the water wells converging to a common center; pumping equipment, rod lines, tanks, do not have to be moved at regular intervals as in the case of the line flood, where the oil producing line of wells was changed every two or three years.

Further, the spacing patterns now employed give quicker results taken in conjunction with the new methods of assuring water supply to all pressure wells and the employment of pressure on the water column. The tendency now is to expect to get results from a new flood six months after the water is admitted to the sand.

Development costs must be returned in a short time in sufficient amount to begin offsetting interest requirements.

Water lines are buried about 30 inches, this being deep enough to protect them from freezing. Customary practice is to start out of the water plant with a 4-inch main line, branching into three-inch with 2-inch lines to individual wells.



Some operators, laying out a new flood program, figure six months to do construction work, such as building pumping powers, laying oil, water and gas lines, setting tanks and drilling the wells and at the end of a year to be getting returns on the work.

Along with the other construction work will come the building of water plants. From a few scattered ventures along this line two years ago, the water plant has come to be definite lease equipment. Its size and location depend upon the number of pressure wells to be served and the topography.

A typical water plant: Steel building, gas engine of 25 to 40 horsepower; air compressor for flowing water wells, with capacity of 100 feet per minute, discharging at 100 pounds; one or more light, geared, triplex plunger pumps, each capable of handling 1,200 to 1,500 barrels of water daily. Some plants drive the pumps from jackshaft, some from shaft extension on flywheel.

Not all water wells are flowed by air. Many of them are being pumped by jack operated from central power. These are combination water supply and water intake wells. The fresh water stratum, 300 or more feet below the surface, is penetrated and packer set below it. Through the packer two-inch tubing runs from surface to the oil sand.

THREE-INCH tubing is run to the water vein, with five-eighths-inch sucker rods and stuffing box with extra long packing. The water is thus raised to the surface and either discharged back into the oil sand through the 2-inch or, more commonly, is pumped into the water supply system for the lease.

Locations to be operated as combination water and pressure wells are carefully selected. With the close spacings employed, it would not be feasible to pump water from all of them. A typical case is that of Sloan

Oil well with 20-barrel flow tank for taking individual gages

& Zook on properties where the flooding program is well under way. Band wheel power, consisting of a 35 horsepower gas engine, 18-foot band wheel with 14-inch face, operates 22 wells. Of this number, four are water supply wells and 18 are oil wells.

In some small areas, shallow wells will be drilled just for water supply but the use of one hole for both water and intake is much less expensive and will be generally followed.

Along with the improvement in practice with respect to assuring a supply of water, equalized to the intake well, has come the careful recording of vital information on performance of wells. It has been mentioned that by the use of meters the operator will have positive check daily or at whatever interval is thought necessary on the amount of water entering the sand.

Modern practice is to keep individual records on producing wells also. A 20-barrel wood or steel tank is set at each oil well and gages are taken regularly of oil and water. Gage poles are calibrated in barrels so that direct readings are made. Upon such information depends such details of operating policies as the use of pressure, adjustment of pumping stroke, abandonment or continuance of oil wells.

The small tanks are flowed to stock tanks, generally set in batteries of two or four so that oil can be run from one while another is being steamed in cold weather. The 140-barrel size is a favorite, connected at the top to each other so none will overflow.

The operator of a new flood development, having decided upon his spacing and the surface equipment of the lease, will lay out his drilling program. Generally speaking, the intake wells will be drilled first to give the advantage of that much more time for water to start through the sand.

The general plan, of course, is to get the entire development completed as quickly as possible. Drilling time in the district is 20 days and less—some have been completed in as little as 12 days.

Two or three years ago, a few cores had been taken at widely separated localities in the Bradford district. They attracted considerable attention and some misleading conclusions were drawn from their analyses. Estimates of the recoverable oil in the district were widely published on the basis of one or two unusually good cores, whose porosity and saturation were far above what has since been proven to be the average case.

Now, a core is so commonplace as to attract only the interest of the operator who takes it. It is standard practice to core a number of locations on a property where a new flood development is under way. First coring was done with regular core drills. Now, with the expense reduced to the point where it is in reach of any operator, using cable tool core barrels, the information thus given is considered indispensable.

A detailed description of the value of coring and the mechanical means employed has previously been published.[1]

Additional comment upon coring was given in a paper[2] by Charles R. Fettke, associate professor of geology

[1]Core Testing With Cable Tools, by R. T. Zook, NATIONAL PETROLEUM NEWS, July 4, 1928, page 50.

[2]Core Studies of the Bradford Sand....., Fettke, Charles R., before New York meeting American Institute of Mining & Metallurgical Engineers, Feb., 1929.

Combination water supply and pressure well. Water is pumped from the shallow horizon to the surface and put back, metered, to the oil sand

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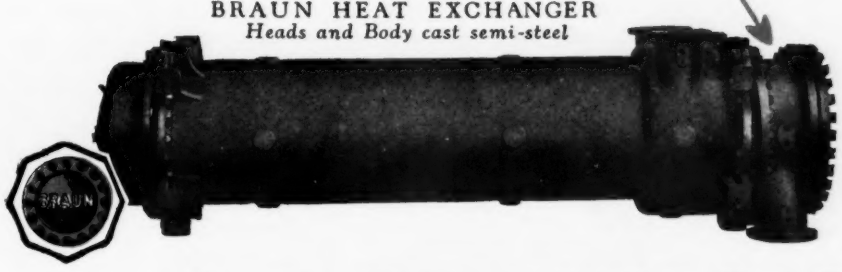

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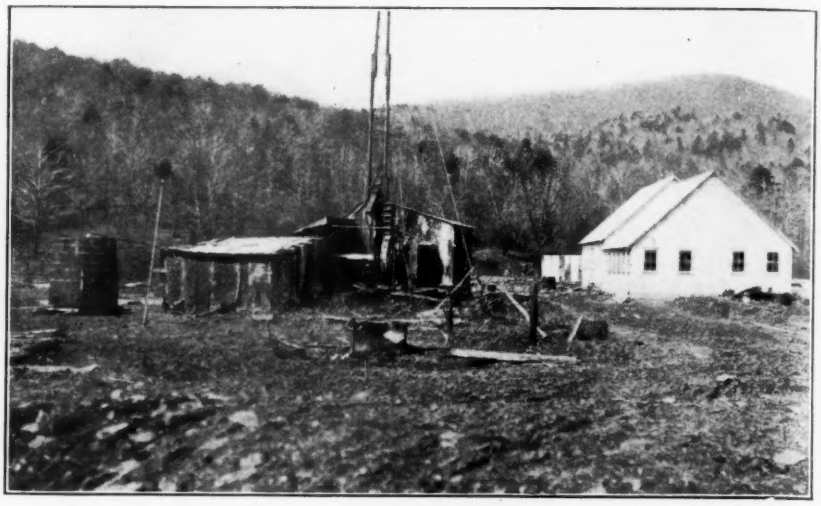
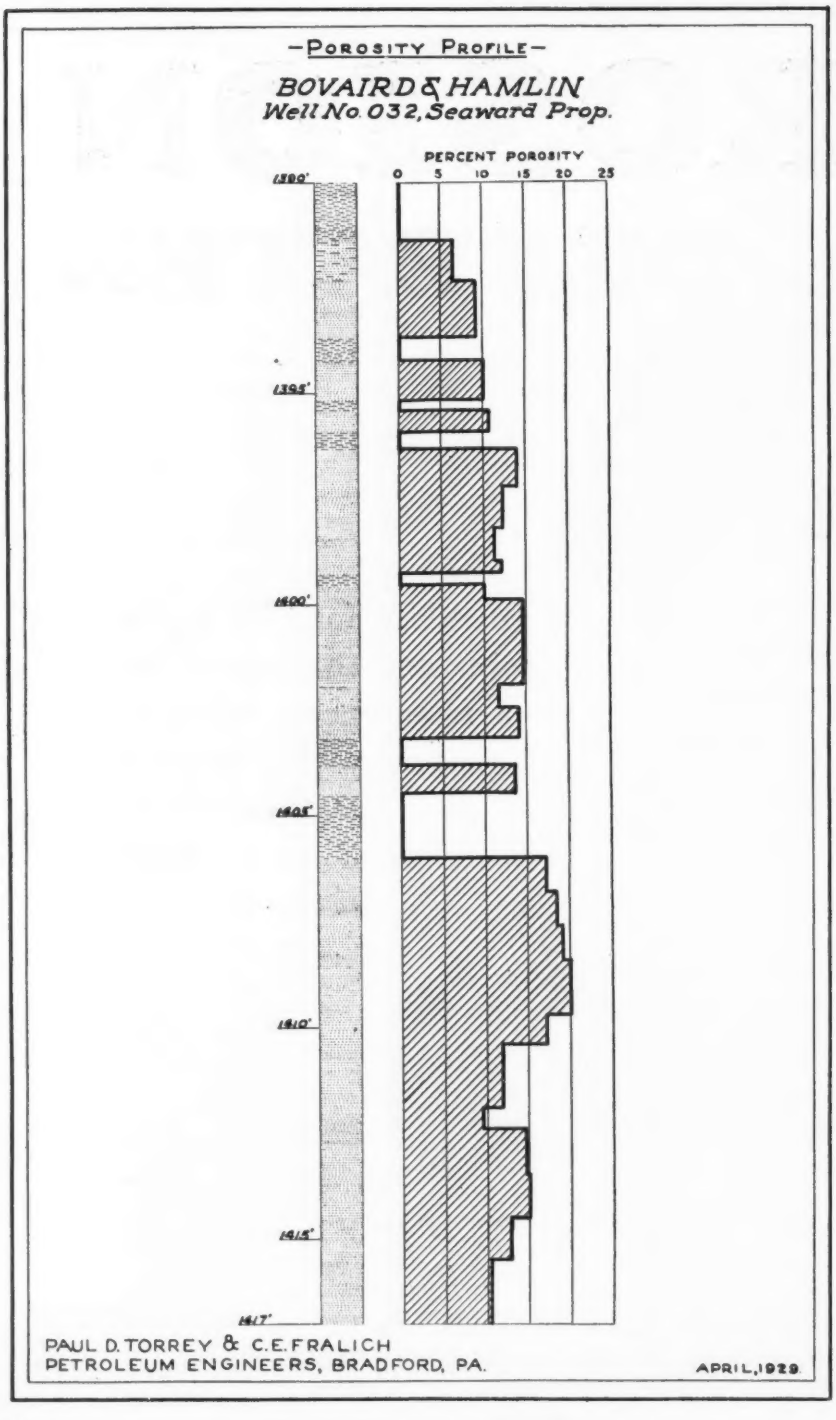
and mineralogy, Carnegie Institute of Technology. He described the methods as follows:

"Two types of cable-tool core barrels have thus far been employed in the Bradford field—the Baker and the Keystone. In principle of operation they are essentially the same. Both consist of two main parts, an outer drilling barrel and an inner core-retaining tube. The drilling barrel is composed of three parts; a drill-barrel head, a drill barrel, and a drill-barrel shoe.

"In the case of the Baker barrel, the drill-barrel head is equipped with a back-pressure valve which opens downward. This serves to force a stream of water down between the drill barrel and the core tube as the bit descends, which washes away cuttings from around the drill-barrel shoe. The Keystone barrel does not have such a valve.



New flood development of South Penn Oil Co. near Bradford. Water pumping plant shown at right

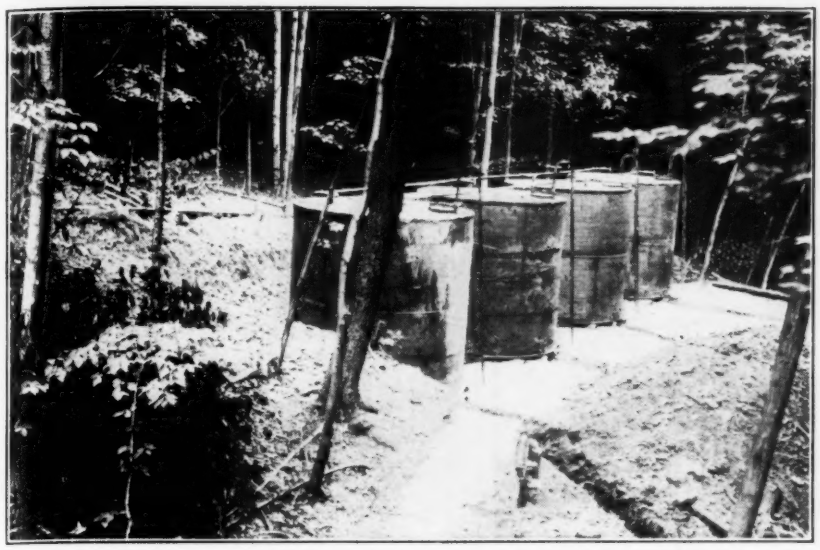


"The Baker drill-barrel shoe has eight cutting teeth which are faced with a special alloy steel. At Bradford, stellite is being used for this purpose. The Keystone bit has only two cutting edges. These, as well as the periphery of the shoe, are faced with stellite. The cutting edges of the Keystone shoe are similar to the cutting edge of the regular standard cable-tool bit with the central part removed to allow the shoe to slip over the core tube.

"In both types a core-tube trimmer shoe with sharp bevel edge faced with stellite is screwed on to the core tube. The Baker trimmer shoe has a loose split trap ring mounted on the inside to retain the core. The Keystone trimmer shoe does not have such a ring; it has a slightly smaller inside diameter than the rest of the core tube, which aids in retaining the core.

"No trouble has been experienced with portions of the core dropping out, as this is usually wedged so tightly in the core tube that considerable pressure has to be exerted to remove it. The Baker core-tube head has a ball check valve to permit the discharge of drilling water trapped in the core tube as it fills with core. The Keystone core-tube head is open. The core-tube heads have a shoulder, which catches, when the drilling barrel is raised, on the shoulder formed by the drill-barrel shoe, which has a smaller inside diameter than that of the drill barrel itself.

"Before coring is started, the hole should be bailed as clean as possible



Above: Battery of lease tanks

Right: Band wheel power set on hillside. The band wheel inside is set on a slope, so as to give direct pull on rods in any direction

so that the core tube will not be filled with mud and cavings before reaching the bottom. This must be repeated each time the tools are removed. Careful steel-line measurements should also be taken each time just prior to running the tools into the hole, so that the recovery of core can be checked with the actual distance penetrated.

"Coring, of course, should be started before the sand itself has been penetrated by the drill. In some parts of the field, by-passing is known to occur in the upper part of the sand and it is, therefore, important to have this part available for examination.

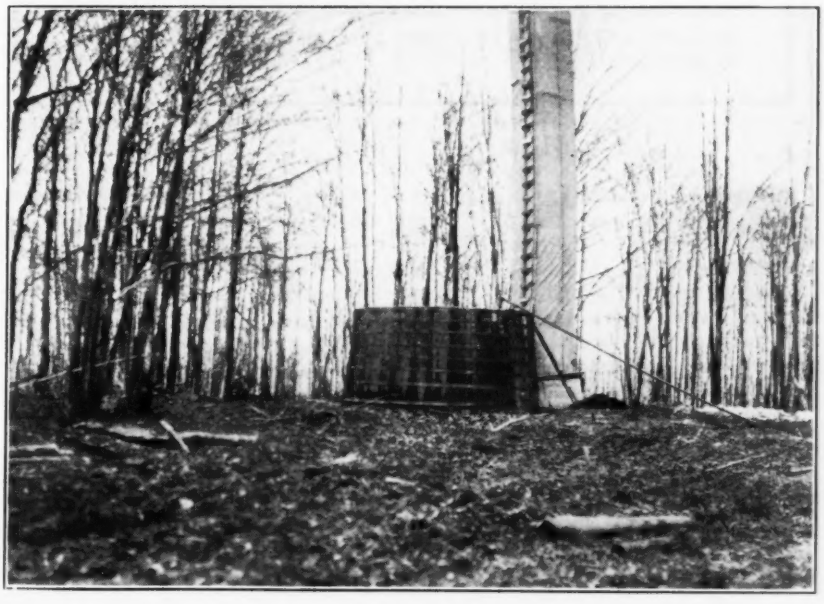
"Experienced cable-tool drillers in the Bradford field have had no difficulty in learning to operate the core barrel. The core barrel replaces the standard bit at the end of the drill stem. A full-size hole is drilled, but where a considerable thickness of sand is cored it is frequently necessary to ream before reaching bottom. At least 20 feet of water should be in the hole.

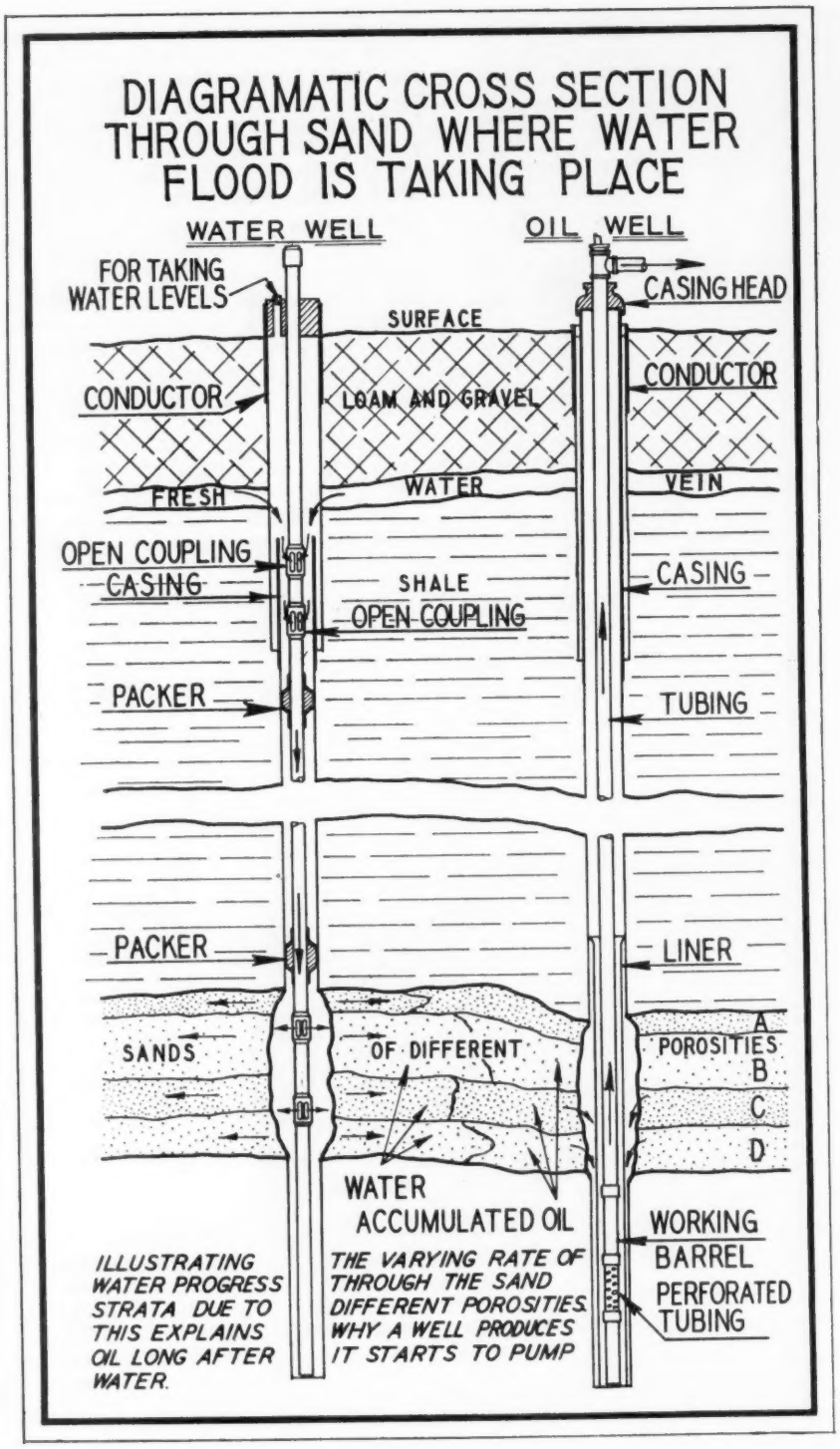
"The motion is the same as for regular drilling, but slower. As drilling proceeds the drill barrel drops down over the core tube, which is stationary during the drilling operation, except when the drill-barrel shoe has drilled about ¾-inch below the core-tube trimmer shoe, at which time the drill barrel strikes the knocking head, which drives the core tube over the core.

"In the case of the Baker barrel, the hydraulic pressure built up at the end of the stroke also aids in causing the core tube to follow down over the core. Care must be taken not to remove the core tube from the bottom of the hole after coring has started.

"At Bradford, the practice is to take from 4 to 7 feet of core at a time. In most instances, the best results are obtained by not exceeding 5 feet. The cores are not in one piece, like diamond-drill cores, but are in biscuit form, because of wobbling of the barrel in the hole. In cores from the Bradford sand, these biscuits range from ½ to 2 inches thick.

Below: This tower, 44 feet high, is used by Sloan & Zook to give "fall" to force water to adjacent pressure wells on tops of hills. Water is pumped to its top from central pumping plant. It consists of 8¼-inch pipe with overflow pipe to tank. Casing is protected from freezing by the high boxing





"Usually it is necessary, after one or two runs, to dress the drill-barrel shoes. They have to be taken to a machine shop to be built up and refaced with stellite and then ground to gage on an emery wheel. At least two extra shoes are kept on hand so that the drilling operation will not be held up while shoes are being dressed.

"Running daylight tour only, 2½ days were required to take a 33-foot core from the Bovaird Oil Co.'s Schofield 96 well. This includes the time required to rig up but does not include one-half day spent in changing from a manila rope to a wire line. A Baker core barrel was used. Reaming was not necessary. The driller had had no previous experience in its operation."

Fettke gave the overall cost per foot of coring Sloan & Zook's Summit G-4 well as $4.78—extra drilling caused by shutting down over Sunday making it 40 cents higher than it otherwise would have been.

Included also was nearly eleven hours spent in reaming. That time is now saved, according to R. T. Zook, who says it is merely a matter of dressing the bit to make full gage hole. In coring practice now, the bit is dressed to 6⅛-inch, which is the size of a 6¼-inch drilling bit when cold.

Early in coring practice too little weight was used. Operating the Keystone barrel, a 3½-inch stem, 30 feet long weighing about 990 pounds was used. Practice now is to use a 4¼-inch stem, 40 feet long, with weight of 1960 pounds. Six-foot jars are used and a 2-foot rope socket. The barrel itself is 19 feet 10 inches long. Usual practice is to run the pitman in the third hole, which gives a 28-inch stroke at the surface, 38 strokes to the minute.

After the core is obtained, it is analyzed by men experienced in that work and determinations are made of porosity and saturation. An accompanying graph shows how the porosity profiles are made up. It indicates clearly the alternating degrees of looseness and tightness of the sand and the impervious, non oil-bearing shale partings that exist in many wells.

IN A NUMBER of instances, refinements of the flooding art have been made possible by core analysis. For example, loose, or high-porosity streaks in the top of the sand, containing chiefly gas when the field was new, have been found. Under this streak occurred the tighter, oil saturated sand.

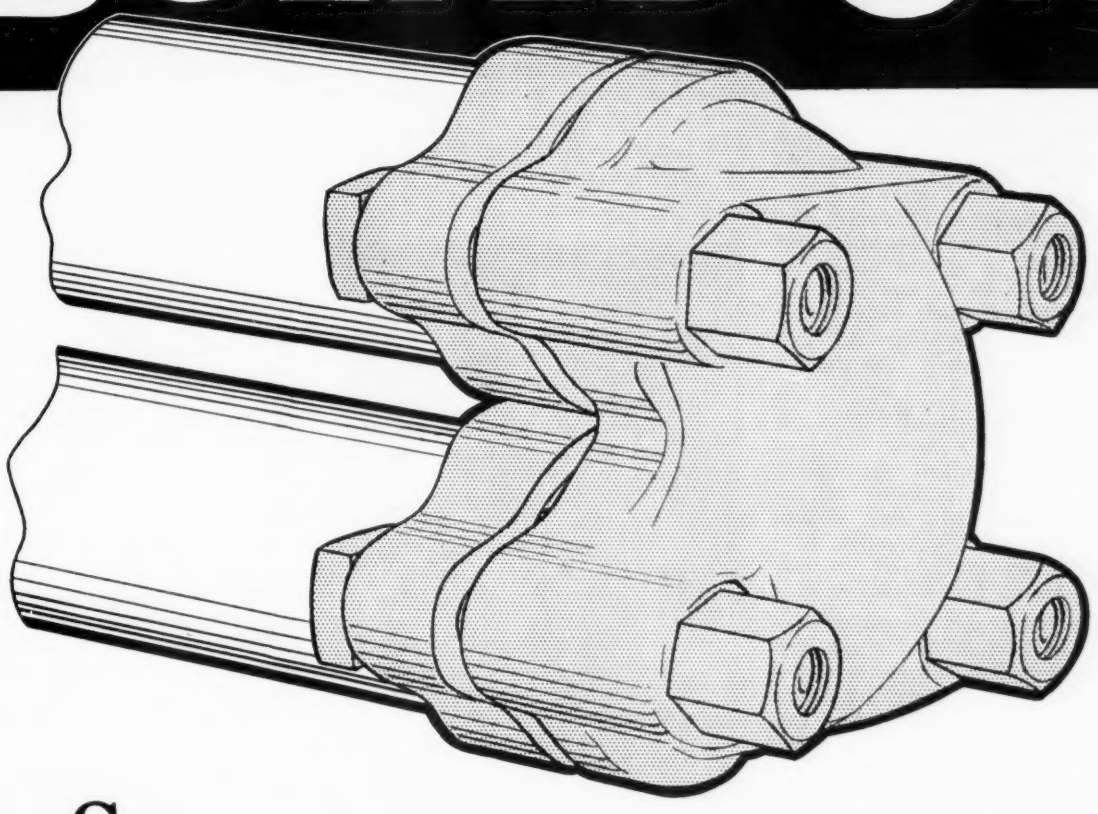
Water, admitted along the full face of the sand, would travel principally through the loose sand. Thus the pay portion of the sand would be robbed of the water and the flooding effectiveness would be either greatly reduced or nullified.

Knowing the position of this loose zone, the operator can set packer below it so as to confine the water to the part of the sand which contains the oil. (There is little or no vertical movement of the water in the sand.)

Again, the sand sometimes carries salt water in the bottom. The core will show the exact point at which this is found and a complete shutoff can be made. On one property, the owner has found, by core analyses, that a loose streak exists in the center of the sand. He is considering the flooding of this lease in two stages.

He would first confine the water to the lower part of the sand, below the open streak and when that had been watered out, he would go back and plug his intake wells to the bottom of the open streak, flooding the remaining loose streak by admitting water through 2-inch tubing at a low pressure and to the hard streak through 4¼-inch casing at a high pressure. The 4¼-inch could be run over the 2-inch and proper packers set on each string to confine the water to the desired strata. The sand, of course, would not be shot.

BOLTED ON



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Coastal Scouting Duties Diversified Even to Riding a Pirogue

Staff Special
FORT WORTH, May 24

BECAUSE of salt dome conditions and the use of geophysical methods of prospecting, scouting in the Gulf Coastal oil region presents a wider range of diversified activities than elsewhere.

Surface evidence of structure generally is lacking and discoverers of oil fields must be guided either by geophysical methods or by such surface indications as strong sulfur water wells, the presence of paraffin dirt, gas seeps or a slight topographic elevation.

From the discovery of Spindletop shallow oil in 1901, down to about 1922, prospectors had to use surface indications entirely as clews to the presence of submerged salt domes. Since that time, most such areas having been worked over, main dependence has been on geophysical data.

In discussing Gulf Coastal Texas and Louisiana conditions before the annual convention of the National Oil Scouts Association of America at Fort Worth, May 20, J. A. Bonham of the land department, Vacuum Oil Co., Houston, outlined some of the duties of the "eyes of the industry" in this kind of territory.

"A good scout," he said, "must be able to buy leases, check records, adjust damage claims, study and pass on surface indications, follow geophysical parties and understand, to some extent, their methods of operation; all this in addition to regular duties of scouting drilling wells, running down rumors of oil shows and checking reports of the finding of dome formations in wildcat tests."

The first information on the presence of one or more of the surface indications is usually obtained from the landowners or trappers in the marshes, according to Mr. Bonham. When this is called to a scout's attention, it is his duty to visit the locality, thoroughly check over the prospect, obtain samples of gas, paraffin dirt or sulfur water, as the case may be, and if the area looks interesting, investigate land ownerships.

By J. A. Bonham

A scout must also do "gumshoe" work to learn if the area has been previously worked with geophysical instruments, and if so, whether or not the results of such work were conclusive. The necessity for keeping strictly under cover is obvious, for the companies and individuals operating in the Gulf Coast do not consider they are acting unethically when they buy leases in the center of an unleased prospect.

If, after securing and digesting all of the past history on the prospect,

J. A. Bonham

the area looks like it has merit, steps are taken to secure options or permits on the land for geophysical exploration. This is usually a part of the scout's regular work.

If the area is subsequently worked with seismograph, it is necessary to settle claims for damages caused by the use of explosives. The nature of these claims is varied. The claimant may want pay for causing his chimney to fall, breaking all of his dishes, causing his milk cow to go dry, or killing the fertility of his setting eggs. The settling of these claims in a manner satisfactory to his company and at the same time keeping the claimant satisfied is no small part of a scout's duties.

There are usually no claims to settle as a result of torsion balance explorations, but occasionally the torsion balance party will unknowingly get on land not under lease to their company and a claim might result.

The activities of geophysical parties are kept under cover as well as is possible. Keeping up with the location of outside companies' parties, and getting information on the result of their work is one of the hardest tasks assigned to scouts, as well as being one of the most important. This kind of "dope" is not usually passed out at check meetings.

Keeping up with the location of the parties and the area being worked is easy as compared to obtaining the results of their work. This can be done by being continually in touch with land owners from whom the company is leasing. The land would not be leased if results were negative. However, this method would apply only when the company had not previously obtained options on all of the land.

Where options to buy have been obtained in advance of geophysical work, it is then necessary for the scout to determine when the company exercises its options. He must have previously checked the ownership for possible "open" acreage and be in readiness to buy any desirable leases.

Land ownership must be checked very carefully, especially for small tracts, as the company blocking an area is more likely to overlook small tracts. A plot of ground 50 by 100 feet is regarded as a good drilling block if located on a proved salt dome.

THE Gulf Coast scout has some problems of transportation to solve that do not present themselves in other districts. Due to the low marshy country bordering the Gulf Coast, the use of automobiles to get to the actual location of wells is frequently impossible. In some of the districts, more particularly in South Louisiana, speed boats and pirogues are part of the scout's transportation equipment.

To get to some of the wells, it is necessary to go as far as the lake shore or bayou bank in a car, then go through the deep water in a speed boat, transfer to a pirogue equipped with a "cajon" guide, and finally finish the trip on foot. It may be necessary to travel by boat for several hours to get to a well not more than ten miles from where your car was left.

Anyone who has not had the pleasure of scouting a la speed boat and pirogue has not had any real thrills. Traveling at a speed of 30 to 40 miles

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Pipe still-tower can fit many purposes Feb. 29, p. 97
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an hour in a boat through a narrow bayou, or canal, is about like driving 50 miles an hour along a winding hill road in a car; and riding in a pirogue through alligator infested marshes cannot be regarded as anything to be looked forward to.

In case there may be some people who do not know just what a pirogue is, they are about the only means of transportation in the South Louisiana swamp country. Every Frenchman is an expert in handling one. They are about nine feet long, 14 inches wide in the center and from six to eight inches deep.

Some people who speak English jokingly refer to them as being boats, but the ordinary canoe is a stable, sea-going craft as compared to a pirogue. Nevertheless, a scout is expected "to get the dope" and the pirogue trip is a part of the job.

Getting information on drilling wells is comparatively easy, once the location is reached. Only in rare instances are the operators prone to withhold drilling information. As there are few markers and formations to check on, this feature does not require much attention. It is necessary to get samples and cores when the company makes use of paleontological data.

Usually the first samples and cores are taken to determine the top of the Miocene formation. But due to the soft character of the Miocene, and the beds immediately above, it is very difficult to determine the top, as compared to some of the older formations, such as the Cook Mountain or Austin Chalk. For this reason the top of the Miocene is not considered a sure marker. If the top is determined as high, it does not always mean a dome uplift.

If production is not found in the Miocene, the next formation to look for is the Oligocene, which is a reliable marker. Should the top of the Oligocene be found relatively high, it can be said to indicate dome uplift and, therefore, the first true dependable marker.

THE Miocene varies in thickness from 2500 feet, plus, in Texas to 4000 to 6000 feet, or more, in Louisiana. Most of the production in the Gulf Coast to the present date is from the Miocene, and the Oligocene. Due to deeper drilling and to the development of domes and structures (such as Clay Creek Dome, Washington county, and Raccoon Bend, Austin county) production is also obtained from the Jackson, Cook Mountain and Mt. Selman formations.

Because formations have been pushed up and, therefore, badly broken the sand lenses carrying oil and gas in large quantities might be found at any depth. For the same reason shows of oil and gas may be expected. These shows do not mean anything unless they are very pronounced. In some instances a well may make as much as 15 to 20 barrels of oil and then not be a producer at a greater depth. But when a sand shows a considerable amount of "live oil" it is a good indication that the well is on or near a dome, and the chances for production in the area are good.

When producing sands are absent in a well, the scout will look for dome formations. These are composed of either gypsum, anhydrite, dolomite or calcite, or several of them. These are found only above salt plugs, forming what is called the cap rock. They are not common to any of the newer beds and for this reason can be definitely said to indicate that the well is on a dome, even before the salt is penetrated.

IN A WILDCAT well when dome formation or rock salt is picked up a new dome is found; and it is with a greater degree of certainty that the operator can start other wells in search of oil. It has happened in some instances that as many as 30 wells have been drilled on a known dome before production in paying quantities has been found. This, however, is unusual. In some instances production is found in the first test. But the quantity of the oil, when found, and the long life of the wells, justifies this extensive drilling.

In addition to keeping up with oil developments in the salt dome area, a scout has to report on sulfur prospects. As sulfur is found on salt domes, in the cap rock, it is necessary that the operator take frequent cores to determine the richness of the deposit.

A prolific sulfur dome of shallow depth is, needless to say, a very valuable piece of property. A scout who is responsible, because of his "dope-getting" ability, for putting his company in on a good sulfur prospect, or oil-producing dome, can be sure that he has earned his pay for years to come.

CHICAGO, May 24.—L. E. Thorpe resigned his position as district sales manager of Transcontinental Oil Co.'s Chicago division May 14. He has not announced his future connections. George K. Homer, of Transcontinental's Tulsa office, is in charge of the Chicago division temporarily.

R. N. Ferguson and R. Simmons, at one time identified with Los Angeles Basin operations of Marland Oil Co. of California, maintain offices in the Subway Terminal building, Los Angeles, as consulting engineers and geologists. Mr. Ferguson is a permit holder on likely looking property under development in the Kettleman Hills.

West Texas

Progressive Distillation, De-Salting, Light Cracking in Special Stills

By Paul Truesdell
N. P. N. STAFF WRITER

Article 5

SKIMMING and cracking of West Texas crude by stages in the same equipment is practiced at the plant of the Great West Refining Co. at Big Spring, Texas.

The equipment was designed and the operating schedule and method developed by G. L. Rowsey, general manager of the refinery. Mr. Rowsey previously had considerable experience in handling Panhandle crude, having worked out a successful method of refining it at the plant of the Amarillo Refining Co.

The Great West refinery is the second oldest of the four Big Spring plants. It has been operating since Jan. 24, this year. The oldest plant there is that of the Big Spring Refining Co. which was described in this paper last week. It has been running since October, 1928.

The youngest Big Spring refinery is that of the Richardson Refining Co., which is not yet completed and the next youngest is that of Cosden & Co. which has been running a little over a month.

The capacity of the Great West plant is estimated at about 8000 barrels a day and it is reported as running at present about 4400 barrels. A 6-inch pipe line brings the crude to the refinery from the Dora Roberts lease in the Howard county field, about 15 miles from the plant.

The crude yields about 26 per cent gasoline and contains 2.35 per cent sulfur as it comes from the well, and also contains some salt water.

The primary equipment at the Great West plant consists of two tubular stills for crude distillation, one high pressure pipe still and five flash chambers. As stated above, the pipe stills were designed by Mr. Rowsey, as well as the rest of the distillation plant.

Each of the pipe stills is designed with three heating stages. The first is a preheating coil consisting of 42 four-inch tubes in the roof; then there is a low temperature bank consisting of 50 four-inch tubes and a high temperature bank consisting of the same number of tubes. All the tubes are 20 feet long and the roof tubes run crosswise.

Contrary to usual practice, instead of having a tall stack, each of the pipe stills has a row of low chimneys on top to carry away the flue gases.

The operating method of the plant is described by Mr. Rowsey as follows:

The crude on the way to the still passes through two heat exchangers in series. In one of these it is in counter flow to the hot fuel oil and in the other to the gas oil cut. The crude, thus preheated, enters the roof tubes of the still at about 250 F. Its temperature is raised about 100 degrees in these tubes and it is flashed at about 350 F. into No. 1 flash chamber, which is simply a horizontal tank about 8 by 30 feet. In this flash tank the salts held in suspension settle out. The vapors from the flash tank pass into a common header which is connected with four bubble towers in series, through which all the vapors from the progressive stages of distillation pass. Some steam is used in the bubble towers to control the flash of the oil and for reboiling purposes.

The unvaporized portions of the crude are pumped from No. 1 flash tank into the low temperature side of the pipe still, where they are heated to about 500 F. and flashed again into No. 2 flash chamber, where more vapors are taken off into the common header to pass through the four bubble towers.

The bottoms from No. 2 flash chamber are passed into the high temperature side (which is the lowest tube bank) of the pipe still, where they are heated up to about 675 F. and flashed into No. 3 flash chamber. The vapors go overhead through the bubble towers and the residue is picked up by a high temperature, steam driven hot oil pump and charged into the coils of the high pressure still.

The oil passes first through the preheating coils of the pressure still in which it is heated to about 750 F. and then it passes into the high temperature "soaking coil" in which the temperature is raised to about 790 F. This still operates under about 100 pounds pressure while the crude stills are under about 20 pounds.

THE oil and vapors from the soaking coils of the pressure still are flashed into two flash chambers connected in series. The vapors pass into a bubble tower of their own and the bottoms are drawn off continuously from the flash chambers to fuel oil storage. This fuel oil is of about 16 A.P.I. gravity, low cold test and 600 viscosity at 100 F. by the Saybolt Universal instrument. The uncracked fuel oil from this crude has a cold test of 55 F. and a viscosity at 100 F. of 1100 seconds.

The cracked vapors pass through a caustic soda scrubber to remove the excessive hydrogen sulfide content and then pass through the condenser, where they are condensed into a 45-A.P.I. gravity pressure distillate containing 70 to 80 per cent of U. S. Motor gasoline. The fixed gases are piped to the boiler furnaces.

The bottoms from the bubble tower

Preceding Articles

Already Published

THE first article of this series, a general survey of refining operations in West Texas was published, on page 40-c of the May issue of NATIONAL PETROLEUM NEWS.

Article 2, dealing with some of the possibilities of West Texas crudes as sources of lubricating oils, appeared on page 69 of the May 8 issue.

Article 3, describing the plant of the Burford Oil Co. at Pecos, appeared on page 75 of the May 15 issue.

Article 4, narrating how a refinery equipment sales engineer became a refiner and some of the things he learned about handling West Texas crude, was published on page 78 of the May 22 issue.

Coming

Article 6, telling how one company is taking advantage of particular conditions in West Texas to make special products, will be published in the June 5 issue.

Article 7, will appear in the June 12 issue and will describe a plant at the farthest west refining center in Texas.

VAPOR PHASE REFINING

Our licensees, in more than thirty refineries, are proving the validity of our claims to their own satisfaction and profit.

You too can decrease your treating losses and improve the quality of your cracked gasoline—at the same time reducing your costs.

⚜ ⚜ ⚜

Vapor phase cracked products, as well as pressure distillates, are being successfully refined.

The Gray Processes Corporation

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Newark, New Jersey

is a zero cold test cracked gas oil of 32 A.P.I. gravity.

The pressure distillate is rerun by pumping it over the tops of the bubble towers, thereby also controlling the temperature of the towers. The operation is so regulated that a combination of the streams from the tops of the four towers which handle the vapors from the crude stills forms a gasoline having U. S. Motor boiling range and about 53 A.P.I. gravity.

The bottoms from No. 1 bubble tower is a light distillate of about 37 A.P.I. gravity and the composite bottoms from the other towers, with the exception of that one which handles the products from the high pressure still, is a gas oil of about 30 A.P.I. gravity. This gas oil has a cold test of about 25 and contains 1 to 1.25 per cent sulfur.

BECAUSE of the high hydrogen sulfide content of the gasoline, there is no receiving house and no look-boxes are used. Instead, the gasoline, gas and water from the steam used in distillation are separated in a separating drum that looks like that used on several cracking processes.

Also because of the hydrogen sulfide content, no attempt is made at this plant to recover the gasoline from the fixed gases. The gas off the gasoline from the crude stills is blown to the still and boiler fires air, the gasoline stream is withdrawn from about the middle of the drum and the water is withdrawn from the bottom.

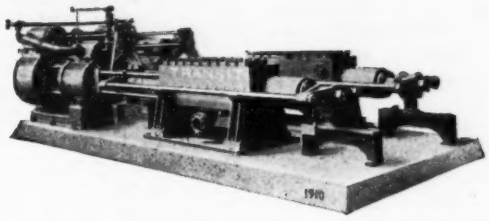
The gasoline is not acid treated but instead is treated by a method worked out by Mr. Rowsey and successfully applied to distillates from Panhandle crude before the Great West plant was built. Lead sulfide is the chemical used and it is stated that the gasoline from this plant is sweet to the doctor test and non-corrosive.

In 1926, when running Panhandle crude, Mr. Rowsey explained his system of lead sulfide treating as follows:

"The lead sulfide used in treating the gasoline is made by the addition of litharge to the waste sodium sulfide from the preliminary caustic wash. Litharge is added to the waste solution which is drawn off and the lead sulfide precipitate allowed to settle out and is washed by decantation. The reaction probably would not take place as readily as it does if it were not for the fact that the sodium sulfide solution contains an excess of caustic which was not neutralized by the hydrogen sulfide present in the gasoline. The reaction is probably due to the fact that the excess caustic dissolves the litharge to form sodium plumbite and the lead is then precipi-

Rigid — Strong

TRANSIT HOT OIL PUMPS



The above is an illustration of a very representative Hot Oil Pump, one of the complete line. Great rigidity and strength are built into TRANSIT Hot Oil PUMPS just the same as they have always been built into other TRANSIT PUMPS.

The pump illustrated is a 32 & 48 x 8½ x 24" TRANSIT Hot Oil PUMP. Capacity 329 gallons per minute, 1500 lbs., pressure, and oil up to 1000° F., in temperature.

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Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
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Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
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Gotkool

GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.

GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.

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KEEP PURE DRINKING WATER ALWAYS HANDY

tated by the sodium sulfide. The equation for the reaction is,

$$PbO + 2NaOH = Na_2PbO_2 + H_2O$$

and

$$2H_2O + Na_2PbO_2 + Na_2S = PbS + 4NaOH$$

"It is common knowledge that the precipitate formed by the regular doctor treatment is an aid to sweetening but chemists have been unable to determine its effect. Theories have been advanced that the precipitate acts catalytically or that its sweetening properties may be due to its absorptive powers. But from our experience we have demonstrated that lead sulfide goes further than the above theories would indicate."

Mr. Rowsey says that the distillate and gas oil are now being marketed mostly in Indiana territory as diesel fuel or for gas enrichment. He expects possibly to start soon to treat the distillates to give them a better odor and market them as domestic furnace oil.

The gasoline now being put out by this refinery, a combination of straight run and lightly cracked product, has an anti-knock value equal to about 29 per cent benzol mixed with 71 per cent Mid-Continent straight run gasoline. He thinks that, if the gas oil made at the plant were cracked and the cracked product added to the gasoline made by present operating methods, the anti-knock value of the motor fuel might be increased to 35 per cent benzol or higher.

Like most of the West Texas refineries the boiler plant is less of a factor than in most refineries in other parts of the country. Aside from furnishing the small amount of steam used in distillation, the boiler plant at the Great West refinery has comparatively little to do. The pumps are almost all electrically driven with the exception of the heavy duty hot oil pumps.

The boiler plant consists of two Walsh & Weidner boilers of the Scotch marine type rated at 125 horsepower each. They are fired in large measure by the fixed gas from the cracking stills and the crude stills. There is no treatment needed for the boiler feed water but the boilers are lightly fired to prevent excessive scaling.

Plenty of water is furnished by six wells in the refinery yard. These are operated by deep well pumps.

Vapor Phase Plant to Crack Coal Tar Oil

CLEVELAND

ENGLAND is soon to have an American vapor phase cracking unit to convert tar produced by low temperature distillation of coal into motor fuel.

C. R. Wagner, recently returned from a stay of several weeks in England in connection with the installation of the unit. It is to be a Gyro plant, the process developed by the Pure Oil Co. and installed at a number of Pure Oil refineries.

Mr. Wagner is assistant chief chemist of the Pure Oil Co. and is largely responsible for the development of the Gyro process into a commercial success.

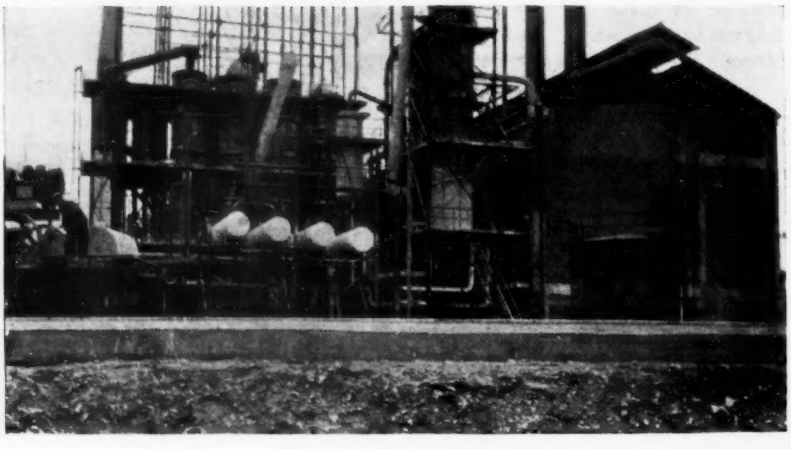
The company installing the Gyro plant in England is Petroleum Refineries Ltd. and it is to be built at Killingholme, near Hull, England. The site of the plant is an 11-acre field completely paved with concrete. The field served as an air field during the war. The company was formed to handle the tar resulting from the carbonization of coal by Low Temperature Carbonization Ltd.

Coke is the principal product of this company, the yield being about 70 per cent of the coal processed. This coke finds a market, in lump as fuel for domestic stoves and furnaces and the breeze is sold for fuel to industrial plants. The low temperature tar is a by product for which not much market seems to exist.

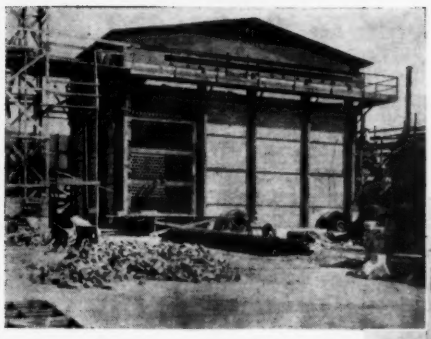
The distillation yields about 20 to 30 gallons of tar per ton of coal it is stated. About 35 per cent of the tar is phenolic. The tar yields by straight distillation and stripping of the uncondensed gases, about four gallons of motor fuel and about 12 gallons of gas oil which can be cracked to give a good yield of gasoline of exceedingly high anti-knock value, it is stated.

The Shell interests have just completed a refinery on the River Seine at Rouen, France. This plant is probably the largest in France. In fact, it is believed the second one to be built there, the Anglo-Persian having started up one several months ago.

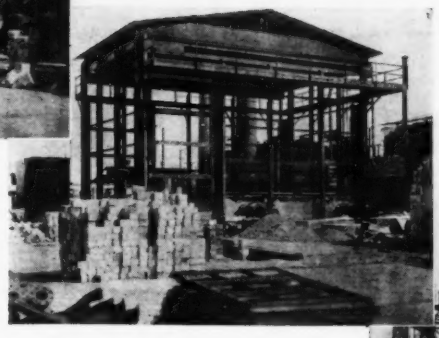
The Shell refinery is rated at 5000 barrels capacity but probably can run considerably more if desired, possibly up to 10,000 barrels a day. It is to operate on oil produced from Shell properties in the Lake Maracaibo district of Venezuela and transported by the company's tankers to the plant.



Above: Concrete paved tract of 11 *acres which is to be the site of a Gyro vapor phase cracking plant in England. Right: Shell refinery at Rouen, France, which is expected to run* 5000 *barrels a day of Venezuela or Mexican crude*



a "McKee" design



Radiant Heat Furnace

for Pipe Still Distillation Unit

These views show a Radiant Heat Furnace for heating 7,500 bbls. of crude with sufficient heat input to vaporize 90 per cent.

Characteristic Features

1 Structural steel supports and trusses are designed so that all the loads imposed by heating elements, both convection and radiant, are carried by the steel work.

2 Flat fire tile arch for roof is entirely carried from the heavy plate girders.

3 Side walls of brick construction are merely curtain walls to retain heat and the weight of these curtain walls is carried entirely by the foundations prepared for same.

4 Furnace is divided into two sections, the radiant section and the convection section. These sections are divided by bridge wall.

5 High heat efficiency is obtained through installation of radiant heat tubes in the roof and where necessary in the side walls of the combustion chamber.

6 Furnace is of the one pass or two pass design according to the specific requirements.

7 When two pass design is used flue gas re-circulation is incorporated in order to control the amount of heat absorbed by the radiant and convection sections.

8 Where maximum heat efficiency of furnace is desired an air pre-heater is incorporated between the outlet of the furnace and the base of the stack.

9 The headers for connecting the tubes are in header boxes, these boxes being closed by angle and plate monolithic insulated doors. This construction conserves heat and is designed to give extreme flexibility and ease of inspection.

10 Necessary peep holes, dusting doors and inspection doors are provided.

11 For protecting the roof of the furnace, the plate girders are constructed to accommodate a corrugated iron roof.

12 For convenience and accessibility of cleaning and inspection, steel plate and angle iron walk-ways and stairways are provided.

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Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

COMMANDER G. C. DAVISON, president of the Tri-State Refining Co., Kenova, W. Va., suggests that perhaps the problem of keeping motor oils in such a condition that they can properly lubricate the bearings in the engine of a high speed car rests quite as much in the province of the automotive engineer as in that of the refiner.

Cool the oil in its journey from the bearings back to the crank case, is the suggestion offered by the commander, who has had a great deal of experience in the operation and lubrication of machinery in the navy. He points out that cooling of the oil to a considerable degree could be accomplished by interposing in the oil line a small cooler with circular fins, probably of copper, to carry off the heat as the oil passed through.

He states that such coolers are used on the lines that supply lubricating oil to the diesel engines on naval vessels. At the high temperatures at which diesels operate it would be impossible to lubricate them without cooling the oil, he states.

If oil coolers were fitted on automobiles it would seem likely that it would be possible to go back to the lighter oils for automobile lubrication, as was advocated, or at least suggested by Charles McLean of the Canfield Oil Co. at the Cambridge Springs meeting of the National Petroleum Association in April.

The weighted average sulful contents of the crudes of the United States is 1.16 per cent, according to analysis of 78 samples of crude from various fields, recently made and reported on by the Bureau of Mines. The weighted average sulfur content of the West Texas crudes is 1.90 per cent.

The highest content of sulfur reported was 4.13 per cent in a crude from the Cat Canyon field, Santa Barbara county, Calif., and the lowest was 0.08 per cent for the Greybull field of Big Horn county, Wyo. Average gravity of American crudes was found to be 32.2 A. P. I. The lowest gravity crude was from the Casmalia field, California, 6.8 A. P. I. and the highest was from Rattlesnake field, San Juan county, N. Mex., rated at 65 A. P. I. gravity.

* * *

THE Tide Water oil interests have recently acquired a tract of land on the Houston ship channel in the Deer Park district, as a site for the construction of a refinery. The news edition of Industrial and Engineering Chemistry says the company plans a 15,000-barrel a day plant.

Axtell J. Byles, president of the Tide Water Associated Oil Co. replied in answer to a question concerning the proposed plant:

"Our plans for building a refinery on the tract of land we recently acquired on the Houston ship channel are as yet far from matured. It is not possible, therefore to furnish any of the information you requested, at this writing."

* * *

HOW not to use lime as a means of neutralizing sulfur compounds in the distillation of crude oil was demonstrated recently in one of the West Texas refineries.

The manager of this plant knew that a number of Jenkins units are being installed to crack West Texas crude because it is figured that the use of lime which is a standard feature of that process, will tend to remove or neutralize the hydrogen sulfide in the oil.

So, he reasoned, why would not lime act the same way in straight distillation? He tried it out. He rigged up a device to feed in a predetermined quantity of lime into the crude stream on it way into the pipe still that is the main distilling unit at the plant. From the pipe still the crude is flashed, the vapors passing into a bubble tower according to usual practice.

The lime experiment did not last long. The bubble tower soon began to show extraordinary antics. Then it ceased to function entirely. The equipment was shut down to investigate. The refinery manager found that the bubble tower was entirely choked up with a hard, flintlike black deposit which filled each of the trays and clung like a part of the metal itself. It would not yield to live steam, it would not yield to scraping.

It was necessary to take off all the manheads and send men into the tower to chip the deposit off the trays with air hammers. To make matters worse, the deposit was exceedingly irritating to the skin.

This refinery manager is willing to pass on free of charge to other refiners the experience it cost him time and money to acquire.

He cannot account to his entire satisfaction for the different behavior of the lime in the crude distillation and in the cracking operation. He believes, however, that in cracking, each particle of lime forms a nucleus about which build up some of the coke-forming particles of the oil, together with some hydrogen sulfide, each little lump of lime, coke and H_2S more or less maintaining its own identity, while in the skimming operation, the hydrogen sulfide atoms and the lime atoms rush together and grab each other with a death grip, and the resulting molecules then merge themselves into the solid mass that choked up his bubble tower.

In other words, he believes the absence of the coke forming constituents in the straight run oil is what made the difference in the behavior of the various actors in the chemical melodrama that took place in the bubble tower.

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BUILDING A GOOD NAME WITH A GOOD PRODUCT

One learns from experience. For the past twenty years we have been making Melrath Gaskets — and nothing else. We have spent time and money, experimenting, testing, searching out the finest methods and materials, in order to produce the best gasket available.

We therefore know that Melrath Gasket users are getting the finest protection for the contents of their pipe lines that it is possible to secure. This was our object. This is your protection.

Makers of Quality Gaskets Since 1909

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613-615-617 Wood Street
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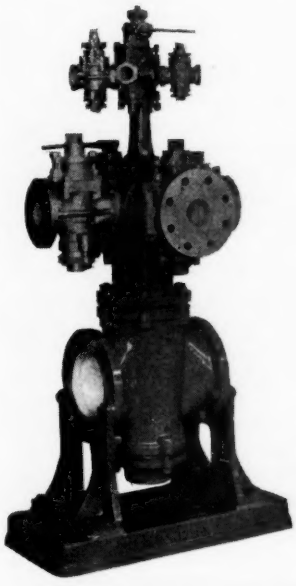
1000 Lbs. Will Not Stick A Northern Double-Packed Valve



In the accompanying illustration, 1000 lbs. are resting on the plug of the lower valve — yet the proper adjustment of the packing glands allows this exhibit to turn easily without the slightest trace of sticking.

There is a Northern Valve for every type of service. Handling gases, air, vacuums, high temperature, viscous and corrosive liquids are not new or untried jobs for Northerns.

Furnished in acid-resisting bronze, chrome steel, aluminum or other special materials suited for the required service. Write for detailed information.

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The EDELEANU Process

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Refining with Liquid SO_2

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Aerial view of Whiting, Ind., refinery of the Standard Oil Co. of Indiana

Growing Market for Oklahoma Crude Oil At Indiana-Illinois Refineries

By J. C. Chatfield
N. P. N. STAFF WRITER

CLEVELAND, May 24

MUCH of the increased demand for crude oil from Oklahoma and Kansas fields has come from refineries in the upper half of the Mississippi valley. Plants in this area draw their raw material almost exclusively from pipe lines tapping the Mid-Continent fields.

To supply the growing needs of consumers in the prosperous farming and industrial region south of the Great Lakes, refineries in the vicinity of Chicago and on the Mississippi have been running close to capacity. Plants in Indiana, Illinois and western Ohio in the first quarter of 1929 have been running at 90 per cent of their rated capacity as compared with an average of about 75 per cent for the country as a whole.

This close utilization of available capacity has been possible in the season of lowest gasoline demand. It has been in the face of substantial building programs which have been carried on during the past two years.

The aggregate refining capacity of plants in Indiana, Illinois, western Ohio and Michigan on Jan. 1, 1926, was 181,700 barrels per day according to the annual survey of the U. S. Bureau of Mines. A year later 30,000 barrels or 16.5 per cent had been added to the capacity and on Jan. 1, 1928, the capacity had risen an additional 40,800 barrels or 19.3 per cent to 252,500 barrels.

IN VIEW of the recent advance in crude oil prices in the Mid-Continent the accompanying article is of particularly timely interest. It shows the reason for the growth in demand for crude in this district is the enlarged refining capacity at plants outside the Mid-Continent but drawing on its crude production through the pipe lines running east.

The 1928 building campaign was even more active than that carried on in 1927. The recently issued government survey conducted as of Jan. 1, 1929, shows an active capacity of 305,800 barrels per day in the district. This is an increase of 53,300 barrels or 22.3 per cent in the year.

Even now the building program has not slowed down. In addition to the enlargement work going on at existing plants, a number of new refineries are being built. At Detroit the White Star Refining Co. is building a 6000 barrel skimming and cracking plant which will be ready to operate soon.

At East Chicago the Empire Oil & Refining Co. has started work on a 15,000-barrel refinery. Several small projects are under consideration for the Muskegon field but these only indirectly will affect the demand for Mid-Continent crude.

An accompanying tabulation shows the capacities of active plants in

(*Continued on Page* 76)

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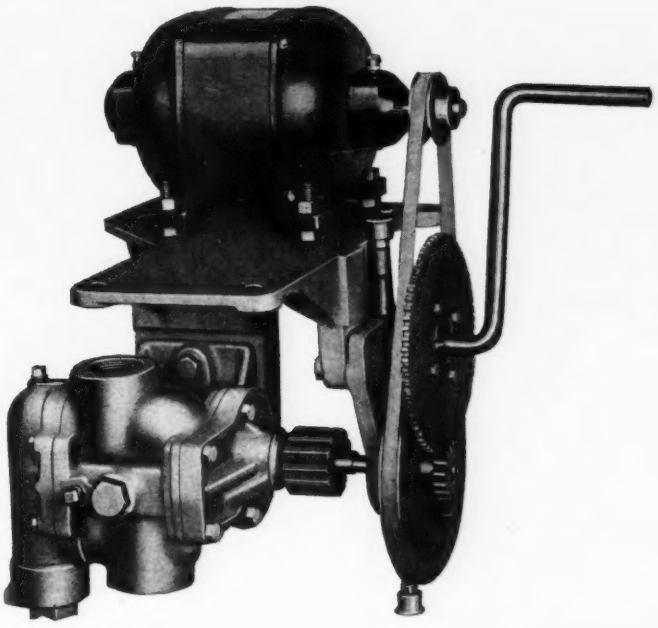
Mechanical Features

Built-in by-pass valve and strainer eliminate extra piping and connections, give less opportunity for leakage and permit pump unit to run with closed nozzle or valve. Strainer is easily cleaned by removing large screw plug without disturbing any other connection.

The cams (or rotors) in pump chamber do not run against cylinder walls or end plates but float freely on a hardened steel shaft. The liquid under pressure balances all working parts and prevents metal to metal contact.

Steel cams and all moving parts are hardened and ground. Shaft is of stainless steel running in bronze bushings. Pump housing and base are cast from best grade semi-steel auto cylinder block iron. Only highest quality materials are used throughout. Machine work and assembling is done by experienced workmen.

Ferro Rotary Pumps are listed with the Underwriters' Laboratories at Chicago.



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Designed for use with one-third horse power 1725 R. P. M. motor with V belt drive. It has a pump speed of 580 R. P. M, and a capacity of 16 gallons per minute.

An illustrated folder with complete Specifications, Description and Prices will be mailed you for the asking.

The Ferro Machine & Foundry Co.

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The Drainer that Never Forgets!

The ECO-MATIC Tank Drainer's positive automatic performance forever eliminates the possibility of neglected drainage operations. No longer is it necessary to delegate this work to station attendants—the ECO-MATIC Tank Drainer automatically keeps the storage tank free from sediment and moisture. Only ECO Compressors are equipped with this exclusive, patented Drainer, *that delivers dry air—always!*

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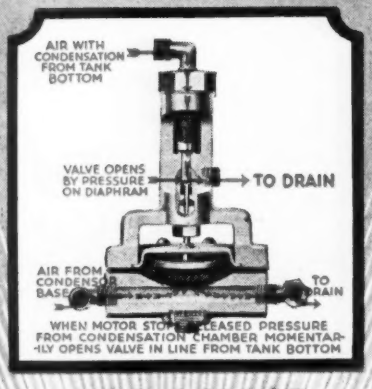
AIR WITH CONDENSATION FROM TANK BOTTOM
VALVE OPENS BY PRESSURE ON DIAPHRAM
TO DRAIN
AIR FROM CONDENSOR
TO DRAIN
WHEN MOTOR STOPS RELEASED PRESSURE FROM CONDENSATION CHAMBER MOMENTARILY OPENS VALVE IN LINE FROM TANK BOTTOM

ECO-MATIC PATENTED TANK DRAINER

The ECO line also includes a complete line of "TIRE FLATORS"—the Tire Inflator that delivers accurately measured air.

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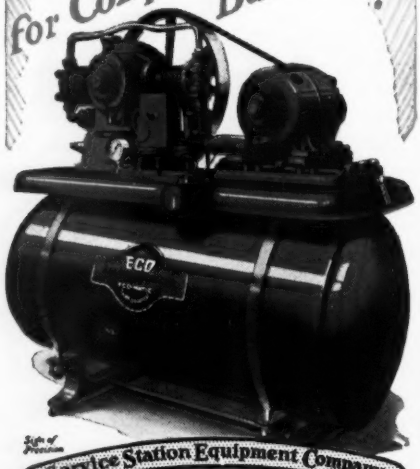

Service Station Equipment Company
Precision Made
ECO
Automotive
Servicing Equipment
Bryan, Ohio, U. S. A.

(*Continued from Page 72*)

the district as reported by the Bureau of Mines since Jan. 1, 1926. From the table it will be observed that the largest increase has been in Indiana, which includes the Chicago group of plants. In three years the capacity of plants in that state has been doubled.

The Indiana increase has been due to the building of the big plant of the Shell Petroleum Corp. in East Chicago, which now has a capacity of 27,000 barrels; doubling the capacity of the Sinclair Refining Co. plant which now has a 40,000-barrel capacity and an increase to 78,000 barrels of the Whiting plant of the Standard Oil Co. of Indiana.

As indicated previously the growing capacity of the district has been utilized more fully than the capacity

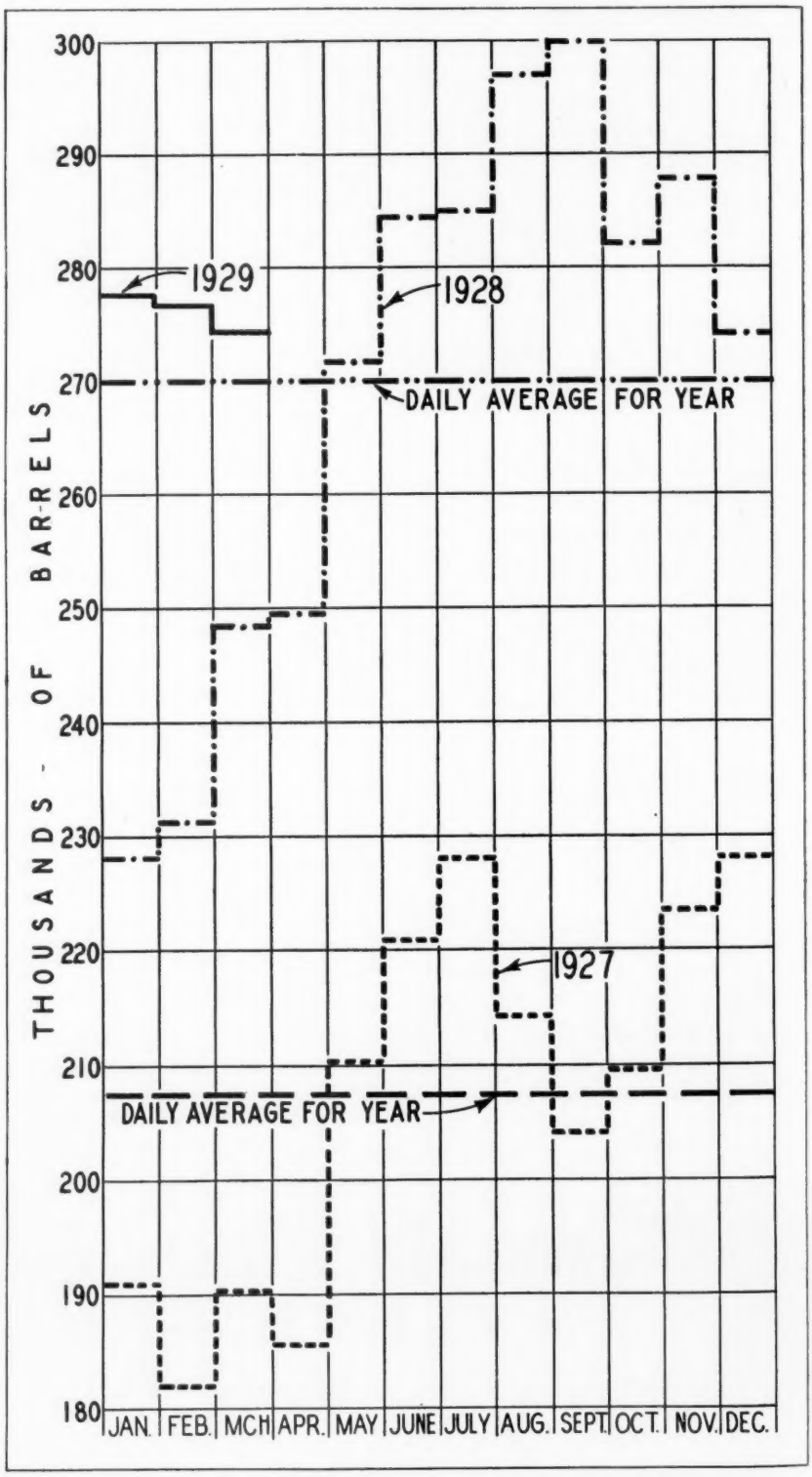

Fig. 1—Daily average crude run to stills at Indiana-Illinois refineries by months since Jan. 1, 1927. Figures from U. S. Bureau of mines reports

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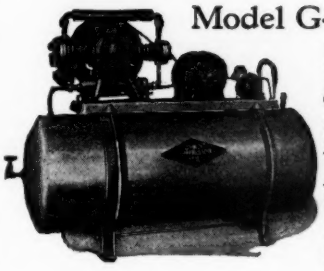
So write, or use the coupon, today.

Model G-18



Two-Stage Automatic Unit. ¾ H. P. Motor. Tank, 20 x 48 — 65 Gallon. 175-lb. cut-out pressure. 3¾ cu. ft. displacement. 1 H. P. for 4½ cu. ft. or 1½ H. P. for 6 cu. ft. 25 feet hose with chuck.

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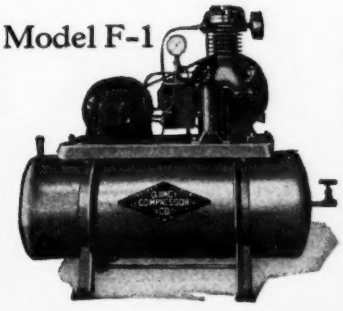
Model F-1

Single-Stage Automatic Unit. ½ H.P. Standard Motor. Tank, 14 x 36—24 Gallon. 150-lb. cut-out pressure. 2.8 cu. ft. displacement. ¾ H.P. Motor for 4.2 cu. ft. and 150-lb. cut-out pressure. 25 feet hose with chuck.

V-Belt of special rubber and fabric construction. Has unusual wearing qualities and minimum stretch.



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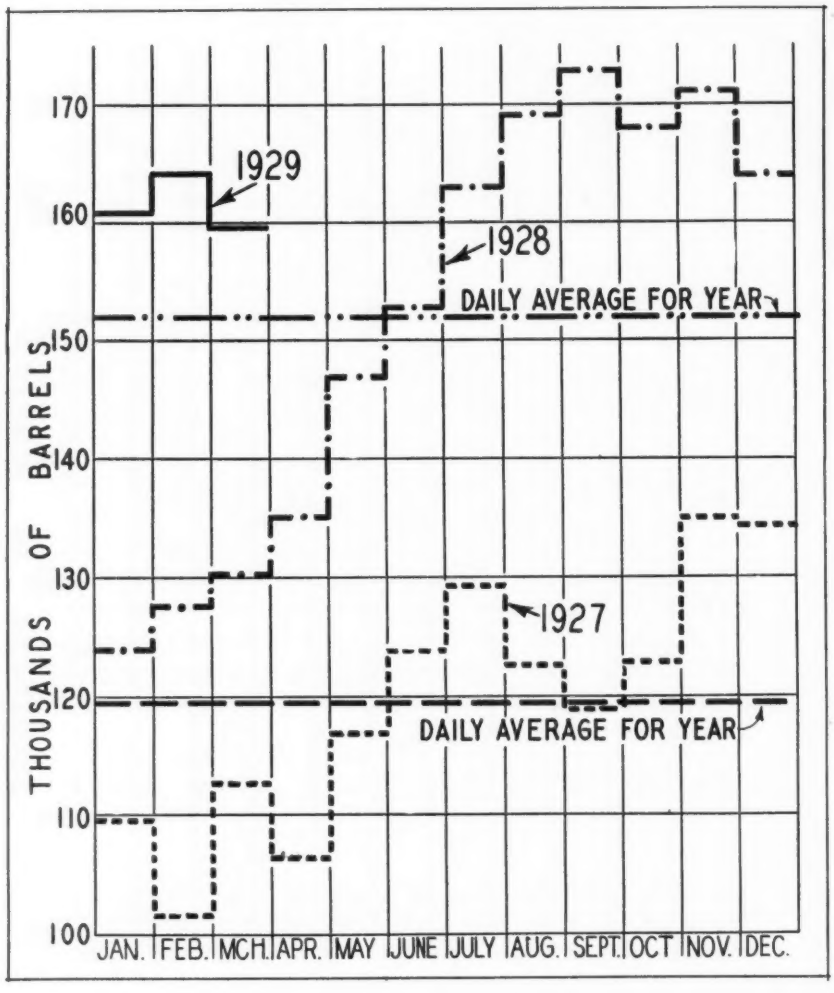


Fig. 2—Daily average gasoline produced at Indiana-Illinois refineries by months since Jan. 1, 1927

of most other districts in the country. In 1928 the Indiana-Illinois group charged 98,905,000 barrels of crude to their stills, as compared with 75,807,000 barrels in 1927. This was an increase of 30.5 per cent. Gasoline production increased 27.5 per cent during the year.

In the first three months of this year crude charges to stills showed an increase of 15.6 per cent over the same period in 1928. The increase amounted to 41,400 barrels daily average. At the same time gasoline production increased 25.3 per cent, indicating expansion of cracking plant building and utilization.

Only one group of refineries in the country obtains a higher yield of gasoline from its crude than refiners in the Indiana-Illinois group. Rocky Mountain refiners, running on exceedingly light crude, obtained a yield of 64.9 per cent in the first quarter this year. The yield of Indiana-Illinois plants was 58.4 per cent.

Oklahoma and Kansas refiners operating on the same grades of crude or better, obtained a yield of 55 per cent in the same period. All plants in the country showed a yield of 43.2 per cent, or about 6 gallons per barrel less than the Indiana-Illinois record.

The better yield obtained by the Mississippi valley plants over the Oklahoma-Kansas group must be attributed to greater cracking. A year ago the Oklahoma-Kansas refiners were obtaining a yield of 53.6 per cent and the Indiana-Illinois plants 53.9 per cent, a negligible difference.

TULSA, May 23.—Charles McCallion, formerly assistant sales manager for LaSalle Petroleum Co., has been placed in charge of tank car sales for the H. F. Wilcox Oil & Gas Co., effective May 15, according to H. E. Bangert, general manager. The refinery which the company is completing at Bristow will be ready by June 1.

Mr. Bangert announced also that J. H. Austin will be in charge of station sales for the company which now is operating four stations in Tulsa.

Growth of Refineries in Middle West

Capacity of Active Refineries in Indiana, Illinois, Michigan and Western Ohio on Jan. 1, 1926, 1927, 1928 and 1929. Figures Taken From U. S. Bureau of Mines Annual Surveys

ILLINOIS

Company	Location	Capacity, Barrels Per Day 1926	1927	1928	1929
Henry H. Cross Co.	Joliet	.....	.....	2,000	2,000
Indian Ref. Co.	Lawrenceville	17,500	17,500	17,500	10,000
Lincoln Oil Ref. Co.	Robinson	1,200	1,200	5,000	6,000
Lubrite Ref. Co.	E. St. Louis	3,000	3,000	3,500	3,300
Red River Ref. Co.	Burnham	500	500	500	500
Shell Pet. Corp.	Wood River	30,000	40,000	40,000	46,000
Standard Oil Co. (Ind.)	Wood River	20,000	20,000	20,000	28,000
The Texas Co.	Lockport	4,500	4,500	6,000	6,000
White Star Ref. Co.	Wood River	2,500	2,500	5,000	5,000
Total		79,200	89,200	99,500	106,800

INDIANA

Bartles-Maguire Oil Co.	E. Chicago	.....	Crack	3,500	2,500
Shell Pet. Corp.	E. Chicago	.....	16,000	20,000	27,000
Standard Oil Co. (Ind.)	E. Chicago	52,000	52,000	65,000	78,000
Sinclair Ref. Co.	E. Chicago	20,000	24,000	24,000	40,000
Total		72,000	92,000	112,500	147,500
Now building—					
Empire Oil & Ref. Co.	E. Chicago	.....	.....	.....	15,000

MICHIGAN

Standard Oil Co. (Ind.)	Saginaw	.....	.....	1,500	1,500
Now building—					
White Star Ref. Co.	Detroit	.....	.....	.....	6,000

WESTERN OHIO

Craig Oil Co.	Toledo	1,500	1,500	1,500	1,500
National Ref. Co.	Findlay	1,500	1,500	1,500	1,500
Paragon Ref. Co.	Toledo	8,000	8,000	8,000	10,000
Solar Ref. Co.	Lima	6,500	6,500	10,000	15,000
Standard Oil Co. of Ohio	Toledo	10,000	10,000	10,000	10,000
Sun Oil Co.	Toledo	3,000	3,000	8,000	12,000
Total		30,500	30,500	39,000	50,000

Warns Industry Must Keep in Balance If Profits Hold at 1928 Level

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, May 23

WARNING that "a clearer and more general realization of the necessity of keeping production and consumption in balance must exist if the results of the current year (1929) are to be as satisfactory as those of 1928," is sounded by Walter C. Teagle, president, Standard Oil Co. (N. J.), in his annual report to his stockholders. The New Jersey company's net profits last year were $108,485,686, the fourth largest in its history.

Mr. Teagle recommended a change in lease forms to remove the compulsory drilling requirements and cited the 29,000,000-barrel increase in stocks of petroleum the first quarter of this year as a danger sign. His concluding remarks to the stockholders follow:

"The record of 1928 is more encouraging in the promise of further progress that it has held out than in the material results actually attained. There is ground for optimism in the clearer understanding which the industry now has of the shortcomings of a system of haphazard production and in the realization that the large reserves of oil above ground, the increasing percentage of light products obtained from crude and the greater surety of finding new production where geophysical devices can be employed have placed the industry in position where it can deliver petroleum products for essential uses indefinitely.

"There are many obstacles in the path toward orderly exploitation of the country's petroleum resources. The present form of lease, which compels an operator to drill regardless of the market for the product, it is hoped, will be superseded by a new form, the operation of which will be permanently beneficial to all concerned. Under such form of lease the interests of the royalty owners and operators would be pooled through unit development, and operators would be released from the necessity of drilling unless such course be in the common interest.

"The welfare of the industry during the current year will be dependent on the progress which may be made toward constructive conservation and the condition of general business prosperity. The industry has it in its own hands materially to improve its position by a more widespread application of the unit operation and development of pools. Statistics of the first three months of the year reflect an increase in stocks of 29,438,000 barrels, a situation which is menacing to the extent that these statistics forecast the course of events over the year."

The 1928 report covers the first whole year in which Standard Oil Co. (N. J.) operated solely as a holding company. Its former operations are conducted by its operating subsidiary, the Standard Oil Co. of New Jersey, a Delaware corporation formed when many of the corporations activities were re-allocated in 1927.

Earnings Account for Standard Oil Co. (N. J.)

	1928	1927
Gross oper inc.	$1,302,779,121	$1,256,505,071
Costs, etc.	1,075,101,964	1,117,307,805
Taxes	35,422,707	24,118,207
Depr. depl. etc.	75,219,689	79,898,680
Net oper inc.	$ 117,034,760	$ 40,180,379
Inc before int chg	$ 134,395,838	$ 58,261,502
Int and disc.	8,533,242	8,517,937
Profit	$ 125,862,596	$ 49,743,565
Profit applied to minority int	17,376,969	9,320,708
Net profit	$ 108,485,686	$ 40,422,857
Common div.	36,583,116	35,065,693
Pref. divs.	$ 71,902,570	$ 1,857,638
Pref divs	.....	3,499,526
Surplus for yr.	$ 71,902,570	$ 1,857,638

The 1928 earnings of $108,485,686 compared with $40,422,857 in 1927, $117,652,201 in 1926 and $111,231,355 in 1925. The largest net earnings of the parent and subsidiary companies were those of 1920—$154,135,888.

The 1928 earnings averaged $4.43 on the 24,484,219 $25 shares outstanding at the end of the year. In 1927 the profits averaged $1.52 a share on the 24,317,219 shares outstanding at the end of 1927.

Subsidiaries produced 84,775,238 barrels of crude oil last year, 42,773,671 barrels in the United States and 42,001,567 barrels in foreign countries. The total was 3,326,589 barrels, or 3.8 per cent, more than was produced in 1927.

Production in the United States was 7,562,125 barrels less than its domestic production in 1927, due principally, Mr. Teagle said, to the decrease in the activities of the Carter Oil Co. Carter produced 18,905,649 barrels of crude last year and 28,219,254 barrels in 1927.

The foreign production was 10,888,714 barrels more than in 1927, much of the increase coming from South America and the Dutch East Indies. Its Mexican production fell approximately 1,400,000 barrels to 3,068,000 barrels.

Its output of natural gasoline totaled 3,817,000 barrels last year, as compared with 3,493,000 barrels in 1927.

Subsidiaries ran 182,199,192 barrels of crude oil to stills, a gain of 22,000,000 barrels over its charges in 1927. The average daily throughput in 1928 was 394,924 barrels, in 1927 354,832 barrels. The average input at foreign refineries in 1928 was 102,888 barrels and in 1927 85,026 barrels, leaving an average of 292,036 and 269,806 barrels, respectively, as the input at domestic refineries.

"The management has worked steadily in the direction of more comprehensive planning and coordination so that the various plants operate as evenly as possible throughout the year, with the minimum disturbance to the personnel," Mr. Teagle said. "This has resulted in a marked gain in the quantity of crude handled through the plants per man employed."

IN SPITE of intense competition in the marketing of gasoline and other products and the overbuilding of service station facilities, the company's market division earned more, Mr. Teagle said. Some of the provisions of the code of ethics have been put into force advantageously, he wrote. Other changes in the New Jersey company's marketing division in 1928 were the formation of the Standard Oil Co. of Pennsylvania; the organization of the Standard Oil Export Corp. to represent it in the Petroleum

Export Association formed by most of the large American petroleum exporters under the Webb-Pomerene law; the formation of an aviation department in the Standard Oil Development Co., and the expansion of its by-products market both at home and abroad.

Concerning the company's relations with the German chemical industry, Mr. Teagle said:

"The I. G. Farbenindustrie A.G., a corporation formed by the merger of the Badische Anilin & Soda Fabrik with several other units of the German chemical industry, has carried on a most extensive program of fundamental research on the synthesis of organic compounds. Outstanding examples of the results of this work are the Haber-Bosch process for the fixation of atmospheric nitrogen to produce fertilizers, and the more recent synthesis of methanol (wood alcohol). In 1925 they brought to our attention certain researches along this line which related to the oil industry and since that time there has been close contact on these developments.

"In September of 1927, the Standard Oil Co. (N. J.) entered into a patent and development contract with the I. G. Farbenindustrie covering new methods for the production and refining of oil products by catalytic hydrogenation. A considerable program of research and experimental work on this line was initiated by our technical staffs in 1927 and actively prosecuted throughout 1928. It seems clear that these new processes will find substantial use in the oil industry in future years, although no accurate estimate can yet be made. It may be said, however, that one important effect of the adoption of catalytic hydrogenation methods by the oil industry, even on a small scale, will be to produce a more definite overlapping of the fields of the oil industry and the industries generally known as chemical."

Balance Sheet of Standard Oil Co. (N. J.) and Affiliated Companies as of Dec. 31, 1928

Assets.

Current assets:			
Cash		$ 87,734,295.06	
Marketable securities		176,112,776.51	
Acceptances and notes receivable (less reserves)		4,838,293.22	
Accounts receivable (less reserves)		168,449,565.22	
Inventories (at cost or less):			
Oil	$233,822,634.97		
Other merchandise	7,390,501.20		
Materials and supplies	34,722,091.74	275,935,227.91	
			$ 713,070,157.92
Permanent investments:			
Stocks not consolidated		$ 166,020,397.90	
Miscellaneous securities		12,552,997.99	
Miscellaneous property		12,376,744.38	
			190,950,140.27
Sinking and special trust funds			905,458.90
Fixed (capital) assets:			
Lands, leases and easements		$ 144,780,993.85	
Plant and equipment		975,560,902.38	
Marine equipment		82,698,125.18	
		$1,203,040,021.41	
Less: Reserves for depreciation, depletion and amortization		551,437,050.44	
			651,602,970.97
Prepaid and deferred charges			15,738,882.28
Total assets			$1,572,267,610.34

Liabilities.

Current liabilities:			
Acceptances and notes payable		$ 3,535,053.59	
Accounts payable		114,570,426.36	
Accrued liabilities:			
Reserved for income taxes	$17,585,024.34		
Other accrued liabilities	9,040,925.75	26,625,950.09	
			$ 144,731,430.04
Funded and long term indebtedness:			
Standard Oil Co. (N. J.) 20-year 5% debentures		$ 120,000,000.00	
Humble Oil and Refining Co. 10-year 5% debentures		22,775,000.00	
Humble Oil and Refining Co. 10-year 5½% debentures		24,422,000.00	
			167,197,000.00
Deferred credits			6,663,460.05
Other reserves:			
Reserve for annuities		$ 8,920,500.32	
Insurance and other reserves		20,542,829.10	
			29,463,329.42
Capital and surplus of minority interests			134,063,471.51
Capital stock:			
(Authorized $750,000,000.00)			612,105,475.00
Surplus:			
Surplus at Dec. 31, 1927		$ 400,142,931.44	
Add: Adjustments applicable to prior years		5,997,953.38	
		$ 406,140,884.82	
Add: Net profit for 1928		108,485,686.14	
		$ 514,626,570.96	
Deduct: Dividends paid		36,583,116.64	
Surplus at Dec. 31, 1928			$ 478,043,454.32
Total liabilities			$1,572,267,610.34

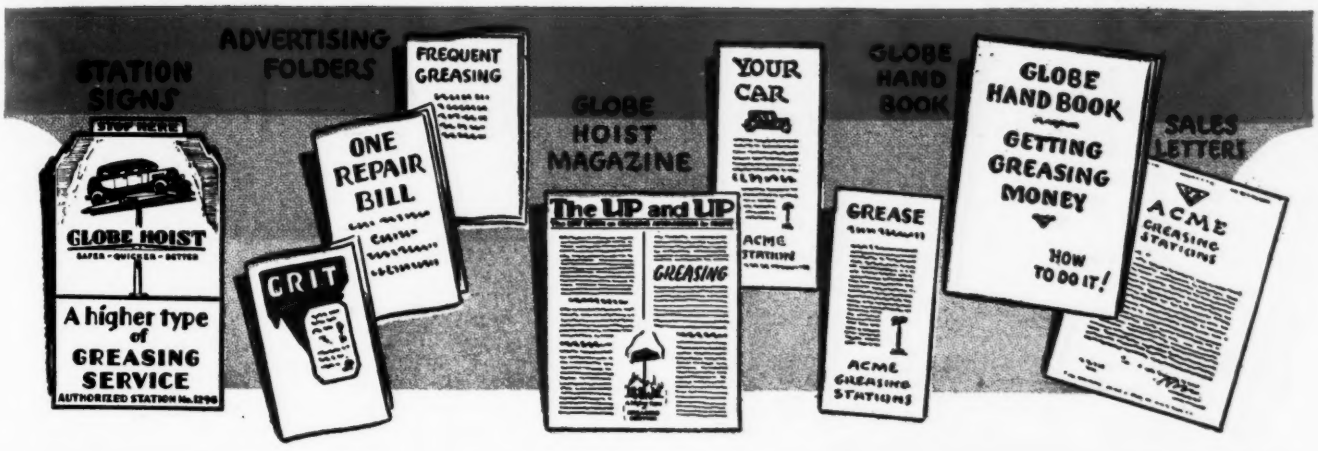
PIPE lines of subsidiaries transported 120,919,386 barrels of oil last year, an increase of 9,000,000 barrels over the volume transported in 1927. Relatively little crude was transported to its New Jersey refineries by pipe lines.

Its fleet and leased tankers carried 145,444,492 barrels of crude and refined oils last year, as compared with 129,691,668 barrels in 1927. Its own vessels transported 101,110,882 barrels.

Its fleet consisted of an average of 65 owned and chartered vessels last year, a decrease of seven from the 1927 average.

Dec. 31 Standard (N. J.) and affiliated companies had current assets of $713,070,158 and current liabilities of $144,731,430, leaving net working capital of $568,338,728. Its cash totaled $87,734,295 and marketable securities $176,112,777, making a total quick asset item of $263,847,072.

It carried its oil inventory at $233,822,635, as compared with $228,063,519 at the end of 1927. Its funded debt at the end of 1927 amounted to $167,197,000, a decline of $2,042,000 last year. Its chief funded item is an issue of $120,000,000 5 per cent 20-year debentures issued at the time it retired its preferred stock two years ago. The remaining funded debt consists of two issues of debentures of the Humble Oil & Refining Co.



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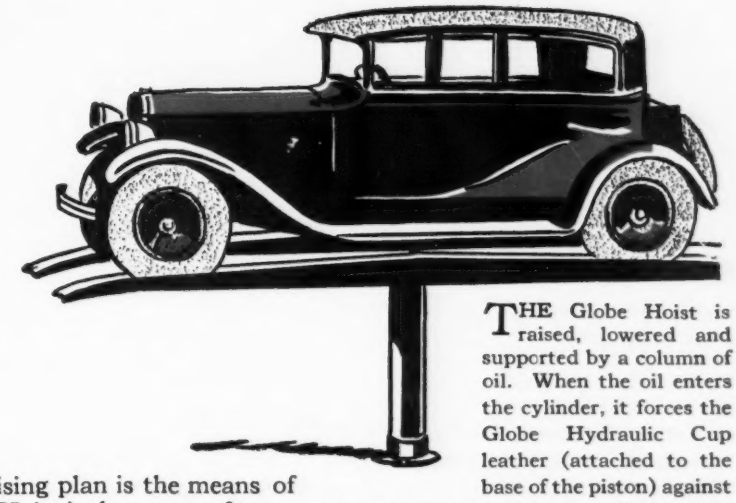
WHEN you buy a hoist, you've got one big objective in mind—to increase your *profits*. And that's exactly what the Globe Merchandising Plan does for you—not only on greasing, but on every other branch of your business.

Every Globe Hoist purchaser is given this complete and *continuous* sales and advertising service. It comprises such immediate sales helps as those illustrated above—including station signs, Globe Handbook, advertising letters and leaflets, as well as cuts and copy for newspaper and direct mail advertising. Additional sales and advertising helps are prepared and furnished you regularly—definite proof of our interest not merely in having you buy a Globe Hoist, but also in making sure that it will materially increase the patronage and profits of your service station. The Globe merchandising plan is the means of bringing the business into your station—the Globe Hoist is the means of turning it out—safer, quicker, better—in other words, to your customers' complete satisfaction.



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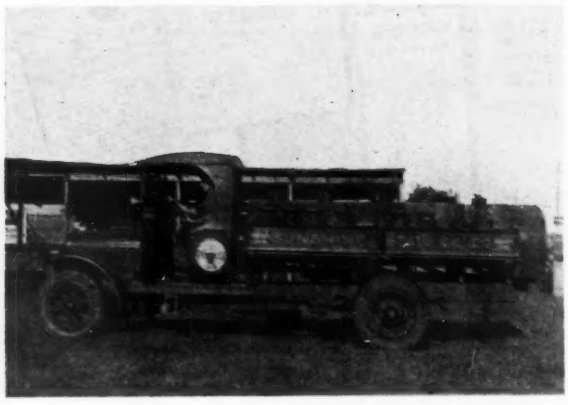
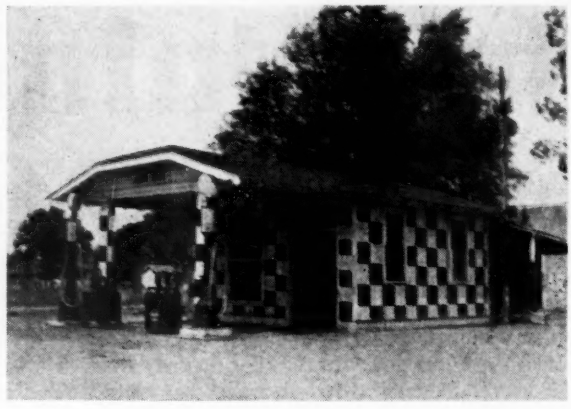
Small Florida Jobbers Concentrate On Lubricating Oil Trade

By Ward K. Halbert
N. P. N. STAFF WRITER



Left: Sunshine State Oil Co., buys oil in drums to save freight and delivers in tank truck to save time. Figure that one out. Below: This is as rare as it looks, a service station controlled by an Independent in Florida



TAMPA, Fla.

OIL jobbers in Florida make most of their money by selling motor oils. Some of them do not handle gasoline at all and those who do handle it use it chiefly to hold dealers whose business is desired as an outlet for lubricants. There are exceptions to these generalities of course, but ordinarily a Florida jobber is glad when his gasoline business does more than break even. Some Florida jobbers, who are only "peddlers" as far as gasoline is concerned, are real merchandisers of lubricants.

One of the outstanding ventures of this character in the central peninsula is that of the Sunshine State Oil Co., Tampa, headed by Bert Maddox, at 42nd street and East Broadway. The company has no bulk storage tanks. It does not even possess a warehouse with railroad frontage. But it has 10 controlled stations as outlets for gasoline and has 1600 lube oil dispensing units in the hands of dealers.

There was a short time, during the Florida boom, when Mr. Maddox averaged more than a carload of motor oil a day, dispensed in and around Tampa with three tank trucks. Volume has shrunk since then; not wholly because of the general decline in business. Mr. Maddox sold his business once and had to take it back and re-organize it in order to save it, he says. Now two tank trucks are more than are actually needed to handle the motor oil.

Nevertheless, Mr. Maddox is encouraged over prospects because his volume is building up currently and he believes business is coming back in Florida on a more substantial basis. Just now he is operating seven trucks; two are stake trucks; two serve gasoline stations in Tampa; one handles kerosene alone; one handles motor oils exclusively, and another gives most of its service to the motor oil trade.

How does a company without bulk plant or railroad warehouse do so much business? is a natural question. The answer is simple. They buy their gasoline from Seaboard Oil Co., local branch of the Pure Oil Co., and Sunshine State Oil Co's. trucks go to Seaboard's deep water terminal and load up, and distribute to dealers direct from there. They could not use a bulk storage plant very profitably if they had one.

Sunshine State Oil Co. handles three kinds of motor oil, a 100 per cent Pennsylvania product bought of the Pennsylvania Refining Co., at Karns City; another paraffin base product from the Mid-Continent field and a golden oil from South Texas. All of this oil is delivered to Tampa by water, in freight ships or barges, in drums. The terminal warehouse stores it for the oil company until it is needed.

Thus it will be seen, Sunshine State Oil Co. does not need a railroad for lube oil deliveries. Its own stake body trucks pick up the drums at the terminal warehouse and deliver them to the company's headquarters at 42nd street and East Broadway. There they are stored in small quantities, and emptied into the tank trucks. A small hoist has been rigged up to lift the drums above the truck and empty them into the truck tank.

Whereas most jobbers buy their motor oils in car lots and distribute them in drums or milk cans, this one buys in drums and distributes in tank trucks. The company buys in drums because the freight to Tampa is cheaper by water, and it distributes in tank trucks for the reason that it can give dealers better service that way than by rail shipments or by stake truck delivery in the original container.

From the closest refinery point, Houston, Texas, for example, the freight saving effected in this way is approximately 1 cent a gallon. Rail freight in tank cars from Houston to Tampa is 6.5 cents a gallon. By water it is 4 cents a gallon, but the drums cost $1.50 each which raises the freight nearly 3 cents a gallon.

IF THE drums could not be sold, the water rate would be higher than the rail rate by nearly a half cent a gallon, but the drums will salvage for at least 75 cents or 1.5 cents a gallon which gives the sea route fully 1 cent the advantage.

Jobbers in Florida who do buy their South Texas oils in tank cars say the penny saving is offset in a great measure by the fact that a car of lubes will expand about 150 gallons between Houston and Tampa. This gain is lost from water shipments by what sticks to the walls of the drums, they say.

But the Independent oil operator of Florida is rather a seller than a

(*Continued on Page* 89)

(*Continued from Page* 84)

buyer. His purchases are so circumscribed that his chance for profit lies almost wholly in out-selling his competitors who are of two sorts. The first class of competitors are big companies whose dealers nearly always reserve the right to handle some nationally advertised motor oil in addition to the big company's line. The second class of competitors are wholesale hardware companies whose traveling salesmen offer motor oil for sale as a side line.

Motor oils compounded by the major refiners are no harder to compete with in Florida than elsewhere. No matter how good the oil is or how well advertised it is, dealers want variety. They have a way of wanting two or three well-known brands of oil in their stations. Consequently the Independent jobber of lubricating oil has an opportunity to supply these nationally advertised brands to big-company dealers, a service the big company agent can not perform himself.

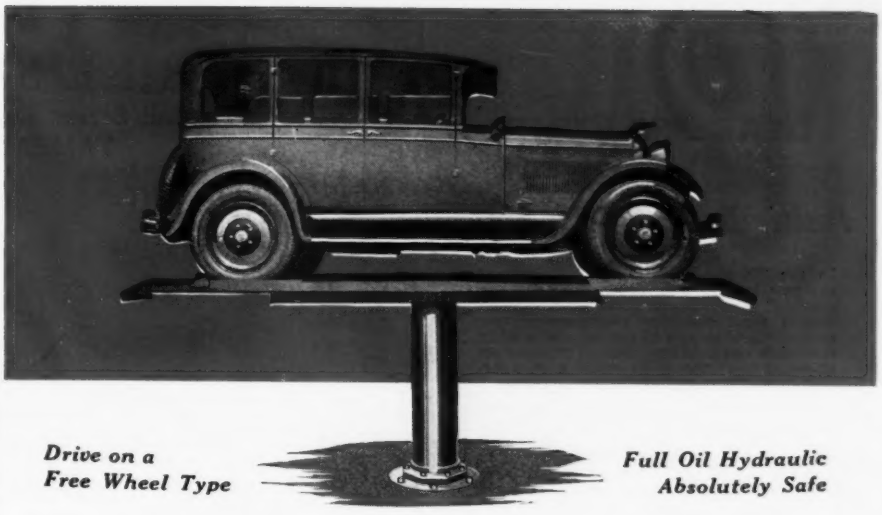
Competition from the hardware stores is more direct. They enter the very field the Independent oil men hope to serve, and at a very small cost because of their salesmen are calling on garagemen and service station men anyway. The oil man must compete with the hardware merchants on a service basis. That is possible where quality and price are in the same range.

Oils sold to garagemen by hardware salesmen are sold on their name. Hardware salesmen do not attempt the usual demonstrations of specification and quality. They say simply, "You know what So-and-so oil is. There is no better. It is 100 per cent Pennsylvania and well advertised among motorists, and here is the price and the terms are thus-and-so."

If the salesman's claims are true (and they usually are) the sales talk is over and the dealer may buy or not, according to his needs. The hardware company's big handicap is service. It can not give much without making an investment out of proportion to its volume of oil business. Oil thus sold must be delivered to the dealers by rail, L.C.L. shipment, or by freight truck on the highway. In either case the dealer has to service himself, handle the drum, fill his dispensing unit and clean up afterward. That is a lot of trouble.

None of those annoyances has to be considered when a dealer buys from Sunshine State Oil Co. or any other jobber who operates in the same way. They supply the vending units to the dealers, keep them filled, do a certain amount of advertising for the dealers and shoulder the responsibility for the authenticity of the oil in the tanks. For example:

Sunshine State Oil Co. handles Penreco as its Pennsylvania oil, and



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Positive Lever Action Operation

In the "Imperial HIGHBOY" embodying the new lever-operated, "dripless, gearless, griefless" pump, Bennett has again demonstrated what intensive specialization and scrupulous adherence to the highest quality standards can achieve. Here you have an all-metal pump that gives evidence of super-quality and super-service in every part.

Before you invest in new lube dispensing equipment investigate the 8 definite service superiorities of "Imperial HIGHBOYS". Obtainable in 30, 45 and 60 gallon sizes—respectively 10, 11½ and 13 inches wide with one or two-way dispensing nozzles.

SERVICE STATION EQUIPMENT CO. LTD., TORONTO 2, CANADA

REPUBLIC STEEL PACKAGE CO. OF CALIFORNIA, RICHMOND, CALIF.

BENNETT EXPORT CORP., 32 BROADWAY, NEW YORK

"IMPERIAL" Pump Piston Construction

No gears — lever action operation—all metal—construction like a fine automobile engine cylinder.

'IMPERIAL' Pump Nozzle Construction

Positive non-drip shut-off nozzle operates at the touch of a finger.

Write for HIGHBOY *Bulletins!*

"Symbol of Quality"

Bennett Pumps Corporation
QUALITY BUILT
Bennett
Dispensing Equipment
FOR OIL MARKETERS
Muskegon, Michigan

SUNSHINE STATE OIL CO.

42nd Street and East Broadway
TAMPA, FLORIDA

LOAN AGREEMENT: Date.....

NO..... .....

NO..... .....

NO..... .....

NO..... .....

NO..... .....

This equipment is subject to return on demand, remains the property of the Company.

....

Signature Driver Signature Dealer

Loan agreement used by Sunshine State Oil Co.

every time a vending unit is filled with Penreco by the tank truck driver he tags and seals the tanks, as shown in an accompanying picture.

Mr. Maddox buys lube vending equipment from six different manufacturers, so all units are not sealed in the same way, but the cover of the opening where the tank is filled is always sealed down by the driver. The seal used is like a car seal, except that it is smaller. It is a lead seal which in sealing fastens itself on a small, stranded wire.

When it is fastened, the seal exhibits the letters "P.R.C.," initials of Pennsylvania Refining Co., on one side and the figure "15" on the other side. The company's permit number with the Pennsylvania Grade Crude Oil association is 15. These seem to be minute details but they have proven good merchandising material for the jobber with the dealers. The dealers appreciate having something to point to when their products are called in question.

To bring further emphasis on this, Mr. Maddox, with the refiner's co-operation, has devised an ingenious "attention getter" which looks like a seal but is only a pear-shaped tag with a metal eyelet in the little end. One of these tags is fastened on each Penreco dispensing unit in a conspicuous place, where the motorist can not help but see it.

The side of the tag carries the words, "Contents guaranteed if seal is not broken." On the other side of the tag is the emblem of the Pennsylvania Grade Crude Oil association, the refiner's name and address and permit number, and the specifications of the oil, as follows:

Gravity	27-28
Flash	490-495
Fire	550-555
Viscosity at 210	95-100
Carbon	0.50%
Color	No. 8

Of course these specifications mean nearly nothing to the average motorist who passes, but they flatter him. They give him credit for being a graduate chemist and an automotive engineer whether he has enough mechanical ability to change tires or not. Besides, they convince him that the company is not ashamed of its specifications, whatever they mean. And the seal persuades him moreover that the company is a little jealous of its product.

MR. MADDOX admits with a smile that the seal and the tag are merchandising media, rather than a protection against substitution, although he contends that they would absolutely prevent substitution.

Ordinarily when Mr. Maddox's big lube oil truck leaves the plant it is loaded with upwards of 600 gallons of motor oil. It has five compartments, each of about 105 gallons. Three compartments are loaded with Pennsylvania oil, respectively medium, heavy and extra heavy. Two compartments are filled with Mid-Continent oil, medium and heavy. The pales are carried in 10-gallon milk cans, eight on a side, aggregating 160 gallons.

Of course the loading is determined in a measure by the route scheduled for the truck on any given day, but this proportion usually obtains. The big truck operates on the following schedule when normal conditions exist:

Monday, south to Sarasota, 63 miles and return.

Tuesday, serve dealers inside the city of Tampa.

Wednesday, east 32 miles to Lakeland and southeast 87 miles more to Sebring, and put up at Avon Park for the night.

Thursday, return to Tampa by an-

THE U. S. MAIL has always been noted for one feature—Prompt, Sure Delivery. From the first Pony Express Rider, to the fearless Air Mail Pilot—all are famous for their devotion to one ideal—The United States Mail Must Be Delivered On Time. They spare no human effort or sacrifice. It is their creed, their religion—NO DELAY IN SERVICE.

That is the ideal for which the makers of Clear Vision Pumps strive, and which they have attained as has no other pump manufacturer. To this end they have perfected a service pump which is a masterpiece of simplicity, both in construction and operation. Having the fewest working parts and the most positive action which engineering science has ever perfected, it insures instant, reliable service, with NEVER A DELAY.

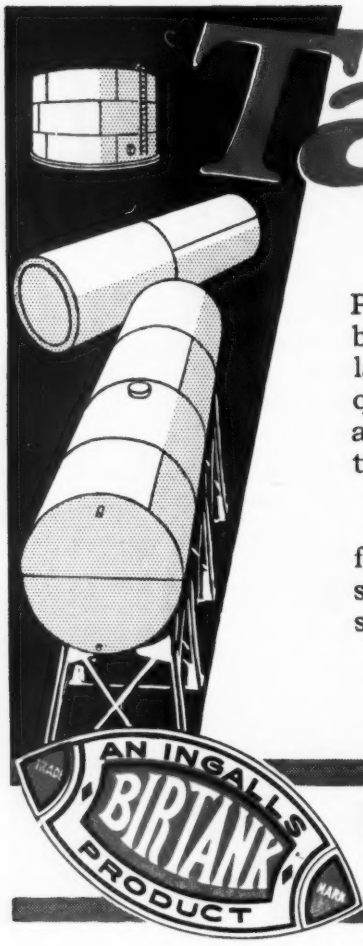
When the motorist says "Fill 'er up" and the attendant takes down the nozzle of a Clear Vision, *there is no delay*. He is backed by the greatest asset which any Service Station can have—a pump which "delivers" quickly, surely, accurately—ALWAYS. Motorists come back to that kind of a station.

Is your station equipped with Clear Visions? If not, drop a card in the mail asking about our complete line. You will find this information valuable to you.

THE CLEAR VISION PUMP COMPANY

Wichita, Kansas

Pacific Coast Factory: 1165 W. Ocean Ave., Long Beach, Calif. Phone 668-345.
Tulsa Branch: 821 E. First Place, Phone 4-5009.
Kansas City: 1313 McGee St., Phone Victor 2606.



Tanks

Put your tank purchases on a basis beyond guess. Buy from the South's largest tank makers and you insure quality and quick delivery. Birtanks are welded not riveted, producing the strongest tanks money can buy.

Standard sizes are carried in stock for shipment as ordered. Special sizes promptly fabricated to any specifications.

Write for catalogue 55.

AN INGALLS BIRTANK PRODUCT

BIRMINGHAM TANK CO.
BIRMINGHAM, ALA.

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE — RED OILS
WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity— this Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London — Hamburg

Cable Address—JASBER Oil City *All Codes*

other route 112 miles long, slightly less distance than that required for Wednesday.

Friday, serve dealers in towns near Tampa, including St. Petersburg, Clear Water, Tarpon Springs, Odessa and as many smaller towns.

Saturday, serve another set of dealers in and near the corporate limits of Tampa. Fortunately the Wednesday-Thursday run to Sebring does not have to be covered in full but once in two weeks, so that allows one day in two weeks for the driver to stay in town and work on his truck, greasing it and making minor repairs.

Customers northward from Tampa are served by the Sunshine Oil Co.'s. small truck which goes nearly to Brooksville, 40 miles up the Seaboard Air Line railroad, and touches some points in latitude.

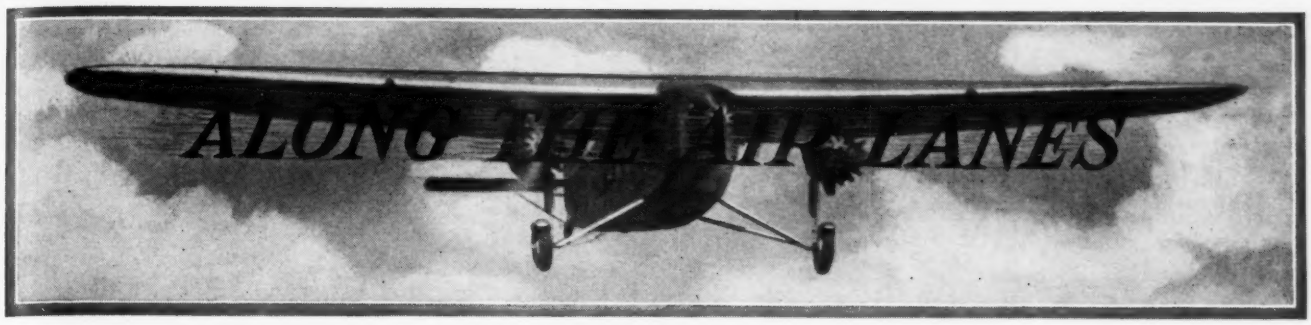
CUSTOMERS on these routes fall in five general classifications: garages, automobile agencies, privately owned service stations, saw mills and light plants. No oil except kerosene is delivered from tank truck to farmers and even kerosene sales are scarce. When they are made the farmer is required to pay 2 cents a gallon above the price at which the same material is delivered to grocery stores for resale.

Whether the lube oil customers are dealers or large consumers, all are allowed pump and tank equipment. Only the dealers are equipped with seals and tags for their tanks however. Some of the bigger dealers have as many as eight 60-gallon rectangular tanks sitting in front of their places of business. All the dispensing equipment is put out on a loan agreement which is a model of simplicity. The original is about 4 x 7 inches.

One thing which has boosted Mr. Maddox's kerosene sales extensively has been an invention which enables grocers to put their kerosene pumps inside their stores. He had a few dozen models of his invention made up by a mechanic in Tampa and proceeded to use them while patent was pending.

Insurance rates discourage country merchants storing too much kerosene inside their stores. If the tank is buried it is usually outside or in the basement, in an inconvenient place where the drip from the pump will not saturate the floor with oil. The invention of Mr. Maddox was a return drain, allowing pump drip to return to storage by gravity. It is permanently installed in the floor.

Now his country store customers can bury their kerosene tanks under the stores and install pumps in a safe and convenient place.



Indiana Directors Fly 4000 Miles a Month

UNOSTENTATIOUSLY, without any waving of flags or blowing of whistles, Standard Oil Co. of Indiana brought its third airplane into service on May 10. It was accepted from the Ford factory and flew the same day from Detroit to Omaha where it picked up Allan Jackson, E. J. Bullock, C. J. Barkdull and R. E. Humphreys, directors, returning from the Casper refinery, and lifted them into Chicago.

The new ship is called "Stanolind II," direct successor to duties of the Stanolind which was sold last fall. Standard's other plane is a small two-passenger ship for emergency hops of specialists and officials. Stanolind II is a giant, all metal, three-motored monoplane equipped with 410 h.p. "Wasps." It can climb to 20,000 feet and the 355 gallons of gasoline it carries will enable it to fly 630 miles without a fill.

The new ship is bigger, faster and finer in several ways than the original Stanolind which two years ago was rated the finest airplane of its kind in the world. With the former plane it took approximately 10 hours to fly from Casper, Wyo., to the municipal airport at 63rd and Cicero avenue, Chicago. The new one will do it in 7 hours and 30 minutes. In a discussion of the company's flying activities, Allan Jackson says:

"The first Stanolind was more or less of an experiment but our experience with it was so satisfactory that we decided to buy a more powerful and capacious machine as a piece of necessary equipment. Air transportation daily is becoming more essential to executives of companies serving extended territories as does Standard Oil Co. of Indiana.

"In the 20 months which the first Stanolind served the company it carried our directors a combined distance of 87,436 miles. Carrying company officials is the chief use Standard Oil Co. of Indiana has for a big airplane but not the only use. There are two secondary reasons for having a plane of that type: to use as an item of laboratory equipment, testing products designed to improve aero engine performance; and to demonstrate the safety and convenience of air transportation to the people in the territory we serve.

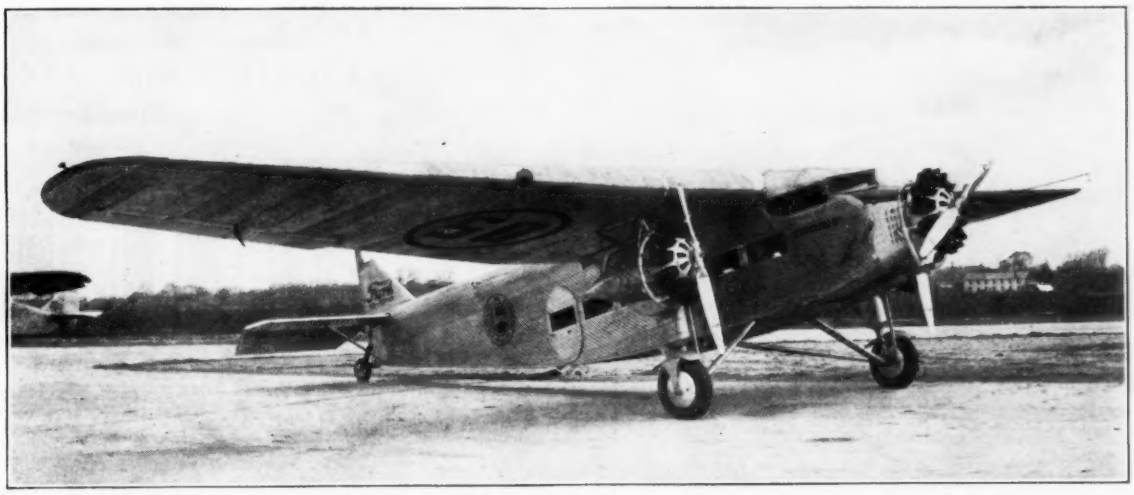
"Observations made in the old plane have been of the greatest service in working out important problems solved in the past two years. Moreover it was of great value in demonstrating the practical usefulness of these ships. Standard of Indiana was the first industrial organization to utilize an airplane in its business.

"The original Stanolind was delivered in Chicago on the day and almost the hour that Charles A. Lindbergh arrived in Paris, May 21, 1927. This, in connection with the tremendous interest in aviation created by Col. Lindbergh's historic flight, made it possible for us to do much in creating interest in aviation throughout our territory. In the course of this work the Stanolind carried 6166 passengers, distances varying from 12 to 1200 miles. In a number of cases it was their first flight.

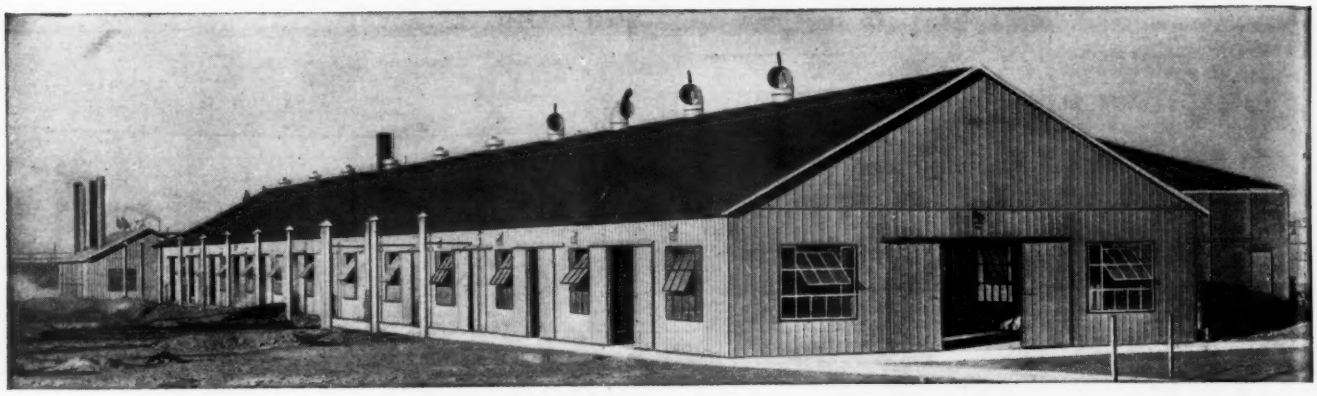
"Stanolind II is larger, faster, more powerful and better equipped than was its predecessor. It is 49 feet 10 inches long, has a wing spread of 77 feet 10 inches and a wing area of 835 square feet. It is 13 feet 6 inches high and weighs 8160 pounds. Its cruising speed is 115 miles an hour and it can be speeded up to 145 miles, more than 25 per cent faster than the original Stanolind.

"While having a somewhat larger capacity than the former ship, we have limited the load to nine passengers, allowing 25 pounds of bag-

(*Continued on Page* 122)



Stanolind II, which succeeds Stanolind, the first plane of the Standard Oil Co. of Indiana, is an all-metal, three-motored monoplane, with 410 h. p. Wasp engine



For all "Outpost" Operations

Steel Structures

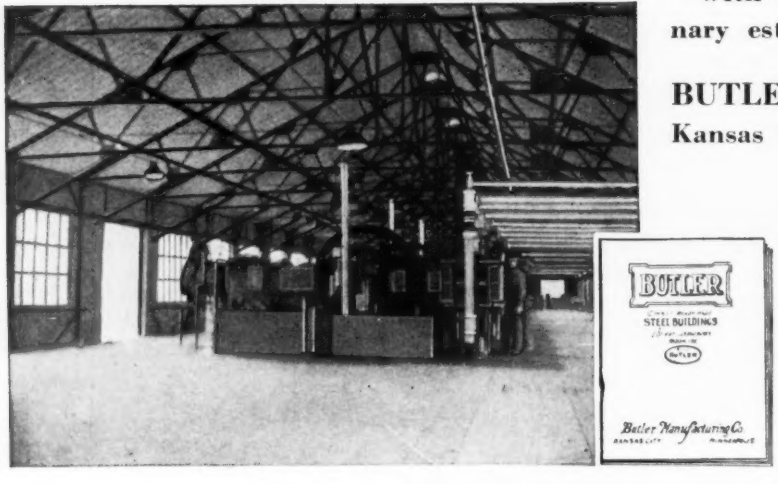
Made entirely of STEEL

HERE is pictured another typical case of "decentralization in industry". It is a modern gasoline plant in Texas, property of the Big Lake Oil Company, completely surrounded by oil wells from which comes its raw material. In Arkansas, cotton gins are in the cotton fields. In Colorado, refining processes are at the mines. In Illinois, corn stalk paper is made in the shadow of the corn stalks. Taking the factory to the raw material is a growing actuality.

In all industries with operations "outpost" in character, Butler Ready-Made Industrial Buildings have won preference on such merits as completeness, economy in acquiring and in maintenance, fire resistance, speed in erection and appearance. But buyers are most impressed by their substantial qualities which make for permanency and with their flexibility which permits enlarging or taking down unit by unit, with full salvage for re-erection.

In Butler Ready-Made industrial buildings, the structural purlins are a combination of tubular and I-Beam design, giving the maximum strength attainable per pound of steel.

With booklet 75M let us submit a preliminary estimate on the size building in mind.

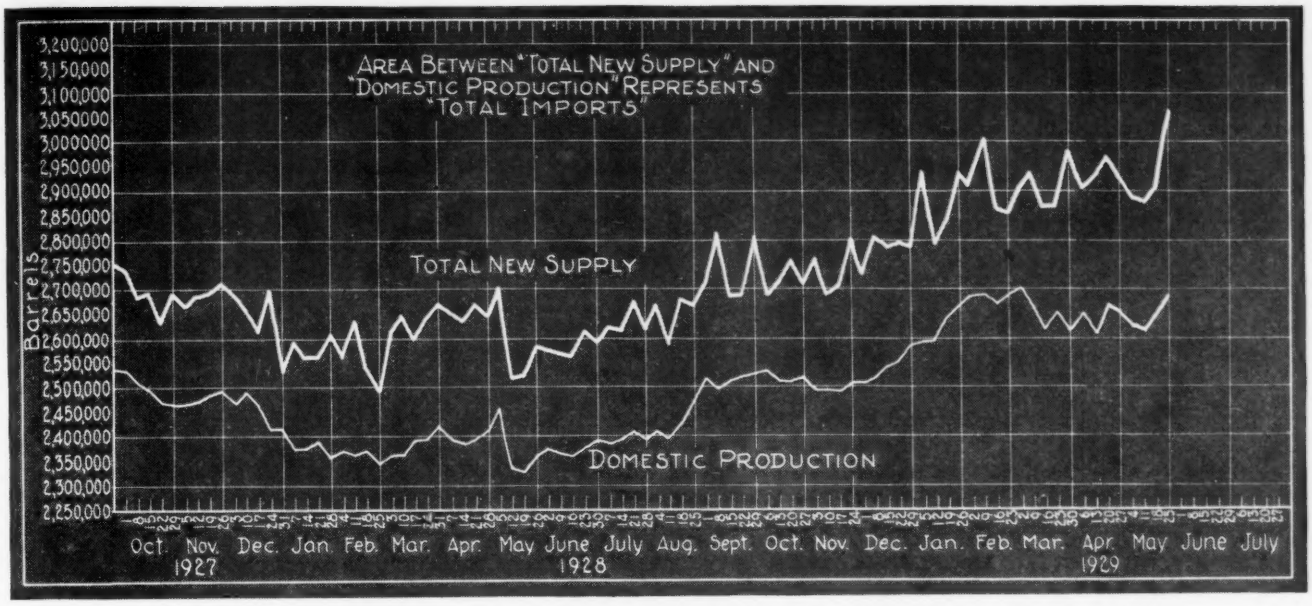


BUTLER MANUFACTURING COMPANY
Kansas City, Mo. Minneapolis, Minn.

BUTLER
READY-MADE
STEEL BUILDINGS

STEEL BUTLER PRODUCTS

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	May 25	May 18
Production east of Rockies	1,921,350	1,878,350
Increase		43,000
Total production in U. S.	2,690,350	2,643,550
Increase		46,800
Crude oil imports	380,857	278,571
Increase		102,286
Total crude supply	3,071,207	2,922,121
Increase		149,086

OKLAHOMA

	May 25	May 18
Allen Dome	23,800	24,800
Blackwell	3,800	3,900
Bowlegs	37,000	35,650
Braman	3,600	3,600
Bristow-Slick	19,450	19,350
Burbank	20,450	20,550
Cromwell	8,200	8,150
Cushing	19,850	20,200
Davenport	1,450	1,500
Duncan District	6,700	6,600
Earlsboro	61,650	60,100
Fox	1,400	1,450
Garber	5,700	5,650
Graham	4,400	4,350
Healdton	12,900	12,900
Hewitt	8,350	8,300
Hubbard	1,900	1,950
Little River	77,900	74,650
Logan County	13,000	12,000
Maud	29,750	26,600
Mission	45,150	38,350
North Okmulgee	13,100	13,650
Oklahoma City	2,850	2,950
Osage (outside Burbank)	25,900	24,850
Papoose	3,300	3,350
Pearson	1,600	2,400
St. Louis	91,800	91,800
Scholem-Alechem	13,200	13,000
Searight	12,600	12 350
Seminole	36,650	34,300
South Okmulgee	7,900	7,900
Thomas	950	950
Tonkawa	10,100	10,250
Wewoka	4,900	4,900
Yale-Jennings	6,950	6,950
Others	52,950	51,950
Total, Oklahoma	691,150	672,150
Increase		19,000

KANSAS

Augusta-Fox Bush	3,000	2,950
Churchill	6,950	6,550
El Dorado-Towanda	12,800	12,700
Florence-Covert	1,000	1,000
Greenwood County	20,800	20,200
Oxford	4,900	4,850
Peabody-Elbing	2,700	2,750
Rainbow Bend	1,000	1,050
Russell	3,150	3,250
Sedgwick County	30,650	30,250
Others	29,900	29,500
Total, Kansas	116,850	115,150
Increase		1,700

NORTH LOUISIANA

Bellevue	600	600
Caddo, light	8,300	8,300
Caddo, heavy	3,300	3,150
Cotton Valley	2,700	2,700
De Soto and Red River	3,800	3,800
Elm Grove	600	600
Haynesville	5,300	5,300
Homer	4 200	4,200
Pleasant Hill	500	500
Urania	5,850	5,950
Others	250	250
Total, North Louisiana	35,400	35,350
Increase		50

ARKANSAS

Champagnolle	8,350	8,200
El Dorado	4,750	4,700
Lisbon	1,350	1,350
Nevada	1,050	1,050
Smackover, light	6,100	6,150
Smackover, heavy	48,800	48,600
Stephens	1,050	1,050
Others	100	100
Total, Arkansas	71,550	71,200
Increase		350

TEXAS (Outside Gulf Coast)

Panhandle District

Carson County	6,600	6,850
Gray County	29,450	27,900
Hutchinson County	25,100	24,800
Wheeler County	650	600
Others	2,000	2,150
Total, Panhandle Texas	63,800	62,300
Increase		1,500

North Texas

Archer County	16,950	16,500
Burkburnett	9,050	8,800
Electra	12,300	12,400
Iowa Park and K. M. A.	5,400	5,650
Montague-Cooke	13,200	13,450
Wilbarger	26,350	27,300
Others	650	700
Total, North Texas	83,900	84,800
Decrease		900

West Central Texas

Brown County	7,950	7,900
Callahan County	3,800	3,700
Coleman County	3,750	3,650
Eastland-Desdemona	6,400	6,250
Jack County	2,450	2,000
Palo Pinto County	400	400
Shackelford County	13,250	13,050
Stephens County	6,400	6,200
Throckmorton County	700	700
Young County	7,000	6,750
Others	700	700
Total, West Central Texas	52,800	51,300
Increase		1,500

West Texas

	May 25	May 18
Crane and Upton Counties	47,500	47,550
Crockett County	2,100	2,100
Howard County	42,400	43,600
Jones County	4,250	4,750
Mitchell and Scurry Counties	2,750	2,600
Pecos County	106,550	97,400
Reagan County	18,400	18,400
Winkler County	144,300	145,600
Others	1,950	1,900
Total, West Texas	370,200	363,900
Increase		6,300

East Central Texas

Boggy Creek	2,750	2,800
Corsicana-Powell	8,300	8,150
Currie	400	450
Mexia	6,100	5,850
Nigger Creek	600	600
Richland	400	400
Wortham	1,250	1,150
Total, East Central Texas	19,800	19,400
Increase		400

Southwest Texas

Dale	550	550
Laredo District	11,600	11,750
Luling	12,000	11,950
Lytton Springs	950	1,000
Salt Flat	48,900	47,550
Somerset	1,800	1,750
Others	4,100	4,250
Total, Southwest Texas	79,900	78,800
Increase		1,100
Total, Texas (Outside Gulf Coast)	670,400	660,500
Increase		9,900

GULF COAST

Coastal Texas

Barbers Hill	7,050	6,900
Batson	1,400	1,400
Big Creek	2,100	2,450
Blue Ridge	3,400	3,100
Boling	1,700	1,800
Damon Mound	750	700
Goose Creek	6,000	6,050
Hull	8,700	8,750
Humble	6,900	8,000
Orange County	2,950	2,950
Pierce Junction	19,300	19,700
Raccoon Bend	4,550	4,650
Saratoga	900	850
Somerville	2,900	2,950
Sour Lake	2,700	2,700
South Liberty	5,850	6,900
Spindletop	27,500	27,750
Sugarland	11,900	11,150
West Columbia	6,600	6,400
Others	4,650	5,000
Total, Coastal Texas	127,800	130,150
Decrease		2,350

Coastal Louisiana

East Hackberry	2,100	2,500
Edgerly	900	900
Evangeline	900	1,000
Old Hackberry	3,300	2,900
Lockport	4,000	3,500
Sorrento Dome	300	300
Sulphur Dome	3,000	2,400
Sweet Lake	500	500
Vinton	3,900	4,050
Others	800	700
Total, Coastal Louisiana	19,700	18,750
Increase		950
Total Gulf Coast	147,500	148,900
Decrease		1,400

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,300	2,400
Elk Basin	850	800
Grass Creek	2,300	2,300
Labarge	1,800	1,800
Lance Creek	250	300
Lost Soldier	3,400	3,300
Oregon Basin	3,250	2,800
Rock Creek	2,450	2,500
Salt Creek	32,100	30,000
Others	3,300	3,700
Total, Wyoming	52,000	49,900
Increase		2,100

Montana

Cat Creek	1,400	1,400
Pondera	3,100	3,050
Sunburst	6,850	6,500
Others	100	100
Total, Montana	11,450	11,050
Increase		400

Colorado

Florence	950	950
Fort Collins	2,400	2,450
Moffat (Craig)	1,650	1,450
Others	2,600	2,600
Total, Colorado	7,600	7,450
Increase		150

New Mexico

Artesia	900	900
Hogback	350	400
Rattlesnake	800	750
Others	400	400
Total, New Mexico	2,450	2,450
Total, Rocky Mountain	73,500	70,850
Increase		2,650

CALIFORNIA

Dominguez	9,500	10,000
Elwood-Goleta	28,400	29,000
Huntington Beach	42,300	42,000
Inglewood	23,500	23,500
Kettleman Hills	3,500	3,500
Long Beach	178,000	177,000
Midway-Sunset	64,000	64,000
Rosecrans	5,800	6,200
Santa Fe Springs	180,000	167,000
Seal Beach	41,000	41,000
Torrance	13,000	13,000
Ventura Avenue	57,000	56,000
Others	123,000	123,000
Total, California	769,000	755,200

EASTERN

(Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	115,000	114,250

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended May 24 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended May 24
Plants Reporting....	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)..	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	.....	22,700	123,200
Da. Av. Crude Runs..	73,074 + 4.0	107,401 + 1.2	67,393 + 7.0	63,393 + 8.1	62,135 — 6.9	373,396 + 2.9
Da. Av. Other Oils...	9,274 + 42.4	7,066 — 11.7	839 — 73.2	1,482 + 25.1	4,355 + 85.5	23,016 + 8.7
GASOLINE—Gallons						
Stocks, May 17.....	32,987,000	74,394,000	17,417,000	8,162,000	11,495,000	144,455,000
Prod. 5-17 to 5-24....	11,889,000 + 14.9	18,154,000 + 5.1	8,282,000 + 3.6	4,814,000 + 9.1	6,696,000 + 9.7	49,835,000 + 8.0
Ship. 5-17 to 5-24....	11,791,000 + 24.1	19,979,000 + 6.1	8,323,000 — 1.7	5,113,000 + 30.6	5,674,000 + 33.4	50,880,000 +13.1
Stocks, May 24.....	33,085,000 + 0.3	72,569,000 — 2.5	17,376,000 — 0.2	7,863,000 — 3.7	12,517,000 + 8.9	143,410,000 — 0.7
Ratio Sales to Prod...	99.2%	110.1%	100.5%	106.2%	84.7%	102.1%
KEROSENE—Gallons						
Stocks, May 17.....	6,900,000	7,278,000	2,895,000	73,000	692,000	17,838,000
Prod. 5-17 to 5-24....	2,561,000 + 2.6	2,189,000 + 6.0	1,407,000 — 8.9	8,000 — 73.3	159,000 — 35.6	6,324,000 — 0.9
Ship. 5-17 to 5-24....	2,464,000 + 5.2	2,475,000 + 9.4	1,628,000 + 2.8	28,000 + 21.7	332,000 + 5.7	6,927,000 + 6.1
Stocks, May 24.....	6,997,000 + 1.4	6,992,000 — 3.9	2,674,000 — 7.6	53,000 — 27.4	519,000 — 25.0	17,235,000 — 3.4
Ratio Sales to Prod...	96.2%	113.1%	115.7%	350.0%	208.8%	109.5%
STOVE DISTILLATE—Gallons						
Stocks, May 17.....	1,393,000	3,029,000	218,000	327,000	73,000	5,040,000
Prod. 5-17 to 5-24....	205,000 — 7.2	515,000 + 7.7	193,000 + 5.5	56,000 — 53.3	85,000 — 38.0	1,054,000 — 7.5
Ship. 5-17 to 5-24....	131,000 — 43.3	355,000 — 40.3	167,000 — 6.5	185,000 + 22.5	94,000 — 39.7	932,000 — 44.6
Stocks, May 24.....	1,467,000 + 5.3	3,189,000 + 5.3	244,000 + 11.9	198,000 — 39.4	64,000 — 12.2	5,162,000 + 2.4
Ratio Sales to Prod...	63.9%	68.9%	86.5%	330.4%	110.6%	88.4%
GAS OIL—Gallons						
Stocks, May 17.....	9,906,000	20,712,000	6,815,000	18,261,000	6,231,000	61,925,000
Prod. 5-17 to 5-24....	2,504,000 + 18.0	2,033,000 — 25.4	717,000 — 23.6	1,299,000 — 39.2	1,626,000 — 19.0	8,179,000 — 17.6
Ship. 5-17 to 5-24....	1,645,000 + 13.6	1,240,000 — 49.4	1,742,000 — 6.9	1,453,000 — 21.2	1,599,000 — 37.4	7,679,000 — 24.5
Stocks, May 24.....	10,765,000 + 8.7	21,505,000 + 3.8	5,790,000 — 15.0	18,107,000 — 0.8	6,258,000 + 0.4	62,425,000 + 0.8
Ratio Sales to Prod...	65.7%	61.0%	243.0%	111.9%	98.3%	93.9%
FUEL OIL—Gallons						
Stocks, May 17.....	12,815,000	55,522,000	43,273,000	33,804,000	26,871,000	172,285,000
Prod. 5-17 to 5-24....	6,043,000 + 3.4	8,110,000 — 2.1	8,493,000 + 6.9	10,364,000 + 15.3	9,155,000 — 8.6	42,165,000 + 2.4
Ship. 5-17 to 5-24....	5,614,000 — 3.5	7,978,000 + 41.4	6,470,000 + 15.0	10,573,000 + 32.7	7,542,000 — 6.1	38,177,000 +15.4
Stocks, May 24.....	13,244,000 + 3.3	55,654,000 + 0.2	45,296,000 + 4.7	33,495,000 — 0.9	28,484,000 + 6.0	176,173,000 + 2.3
Ratio Sales to Prod...	92.9%	98.4%	76.2%	103.0%	82.4%	90.8%

Gasoline Produced by Various Methods, Week Ended May 24

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	7,469,000	62.8	12,168,000	67.0	6,133,000	74.0	4,698,000	97.6	2,828,000	42.2	33,296,000	66.8
Cracked.....	4,121,000	34.7	4,988,000	27.5	1,547,000	18.7	.....	....	3,040,000	45.4	13,696,000	27.5
Natural.....	299,000	2.5	998,000	5.5	602,000	7.3	116,000	2.4	828,000	12.4	2,843,000	5.7
Total.....	11,889,000		181,154,000		8,282,000		4,814,000		6,696,000		49,835,000	

+ or — columns are % change over previous week.

Price Changes Stimulate Gasoline Shipments

Staff Special—By Telegraph
TULSA, May 27

THE series of crude and tank wagon changes week of May 18 to 24 inclusive stimulated gasoline shipments from all Mid-Continent districts except North Texas, according to the weekly operations reports from 93 refiners to NATIONAL PETROLEUM NEWS.

Gasoline shipments for the week ended May 24 increased almost 6,000,000 gallons, a total for the field of 50,880,000 gallons. Kansas refiners enjoyed an increase amounting to 24.1 per cent while Oklahoma refiners increased shipments 6.1 per cent. North Texas refiners lost business by 1.7 per cent but the West Texas refiners increased business 30.6 per cent and the Louisiana-Arkansas refiners enjoyed an increase of 33.4 per cent. For the field, the increase amounted to 13.1 per cent.

Figures for the field are not com-

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 24. Change in stocks figured from April 26.

	Gallons
GASOLINE	
Production	186,791,000
Shipments	186,413,000
Net change in stocks	+378,000
Ratio sales to production	99.8%
KEROSENE	
Production	25,473,000
Shipments	25,224,000
Net change in stocks	+249,000
Ratio sales to production	99.0%
STOVE DISTILLATE	
Production	4,528,000
Shipments	4,706,000
Net change in stocks	—178,000
Ratio sales to production	103.9%
GAS OIL	
Production	40,471,000
Shipments	33,330,000
Net change in stocks	+7,141,000
Ratio sales to production	82.4%
FUEL OIL	
Production	154,150,000
Shipments	137,790,000
Net change in stocks	+16,360,000
Ratio sales to production	89.3%

parable with last year, due to the inclusion of West Texas but shipments from Kansas, Oklahoma, Louisiana and Arkansas can be compared. At the corresponding time last year, shipments from those districts were less than half a million gallons under the total for the past week.

Despite increase in shipments in Kansas, stocks increased slightly due to an increase of 4 per cent in crude charges and 42.4 per cent in charges of other oils which increased gasoline production 1,500,000 gallons. Stocks were reduced in Oklahoma, production being up 5.1 per cent. North Texas refiners drew on stocks slightly but the Arkansas-Louisiana refiners increased stocks a million gallons. Drafts on stocks in other districts were sufficient in volume to cause the field as a whole to show a reduction of 1,000,000 gallons.

While shipments were exceptionally heavy, crude runs had been increased in each district except Louisiana and Arkansas, the total amounting to 8,600 barrels daily average. Charges of other oils were increased 8.7 per cent. Gasoline production was increased 3,700,000 gallons to a total of 49,835,000 gallons.

Kerosene shipments were increased in all districts while production was reduced slightly and stocks accordingly were reduced 600,000 gallons. Kansas refiners increased stocks slightly while all the other districts drew on storage.

For a four weeks' period both gasoline and kerosene production and stocks have been almost on a balance. Gasoline stocks have increased only 378,000 gallons for the period while kerosene stocks have increased 249,000 gallons.

Stove distillate stocks were increased 2.4 per cent but for the four weeks' period shipments have outdistanced production by 178,000 gallons. Stocks at end of week totaled 5,162,000 gallons. Gas oil shipments and production both lost ground, production falling off 17.6 per cent and shipments 24.5 per cent.

Fuel oil stocks increased 3,800,000 gallons with West Texas the only district drawing on storage. Production increased in each district except Oklahoma and Arkansas while shipments were lower only in Kansas and Arkansas. Shipments in Oklahoma increased 41.4 per cent.

NEW YORK, May 24.—The name of the Standard Oilstocks Corp., an investment trust dealing only in securities of the Standard Oil group, has been changed to Combined Holdings Corp. to avoid confusion with one or two other investment trusts. Headquarters of the Combined Holdings Corp. are in Philadelphia where the trustee of its investments, the Fidelity-Philadelphia Trusts Co., is situated.

Side View—Fulton Type Look Box

The Fulton Type Look Box

featuring

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Write for Descriptive Bulletin No. 38

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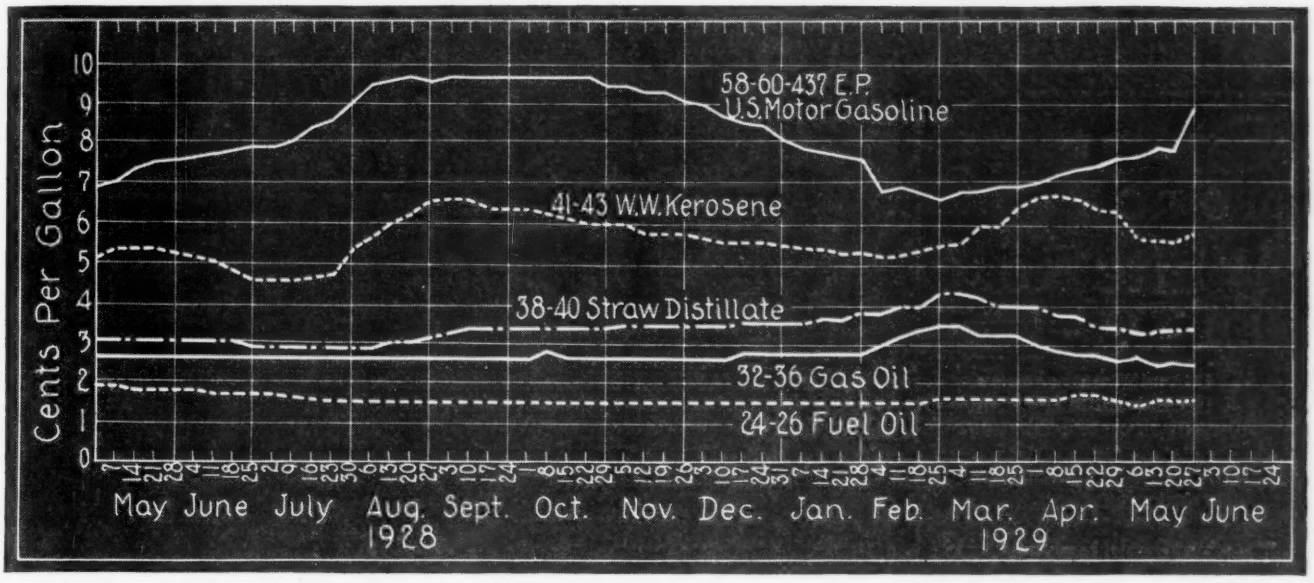
Refinery - Tank Wagon Markets

National Petroleum News

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Mid-Continent Gasolines Advance With Crude Price Change

Staff Special

TULSA, May 25

THE series of tank wagon and crude oil price changes directly affecting the Mid-Continent kept the refinery market in an extremely unsettled condition throughout the week of May 20 to 25 inclusive.

The market was still unsettled May 25 but gasoline quotations were more easily obtainable than they had been previously during the week. Advances of 1 to 1.25 cent a gallon were made on gasolines, with only minor changes in the prices of other refined products.

Kerosenes were in fair demand with more favorable weather reported. Distillates and gas oils were quiet and fuel oils were steady in price and demand.

Natural gasolines were given some support during the week when two large manufacturers started buying. Buying from other sources was steady.

Gasolines

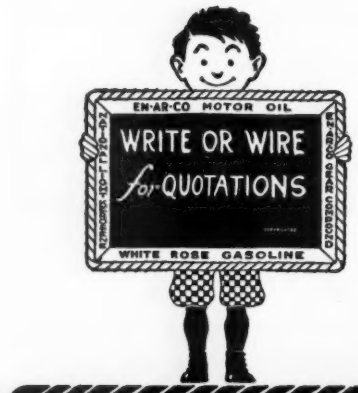
The gasoline market especially experienced a stormy time during the week. The first disruptive factor came on May 17 when it was announced Standard of Indiana would advance gasoline May 18. Refiners for the most part withdrew quotations May 18 or had about decided to advance prices 0.25 to 0.50 cent a gallon effective May 20, when Prairie Oil & Gas Co. announced an advance in Mid-Continent crude oil prices on that date.

This announcement caused refiners to withdraw quotations immediately. They were extremely reluctant to commit themselves on new quotations, apparently waiting to see what the other fellow would do, and particularly if West Texas crude would be advanced, and if not, what the West Texas refiners would quote in the face of the tank wagon and Mid-Continent crude advances.

The afternoon of May 21 their worries apparently were over for the time being, because Humble Oil & Refining Co. advanced West Texas crude oil substantially. Oklahoma refiners began figuring what their new quotation schedule would be, when Standard of Indiana put out another tank wagon and service station price increase of 1 cent, effective May 23.

That advance helped to raise the sights of the refiners again and by May 24 the prevailing quotation on 58-60 U. S. Motor in Oklahoma was 9 cents a gallon, although several refiners reported protecting a few contract customers at 8.75 cents where the orders had been mailed in prior to the latest tank wagon advance.

Indications were that barring any more disruptive factors, the gasoline market next week would settle somewhere between 8.75 and 9.25 for 58-60 U. S. Motor with the other grades of



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gasoline having been advanced accordingly.

The increase in crude oil prices will have to be carried mainly by gasolines, several refiners said. Kerosenes may take a fraction of the load and a small part may be distributed among the neutral and cylinder stocks, but little help can be expected at this time from the other commodities.

Natural Gasolines

Phillips Petroleum Co. during the week entered the market for grade AA, the first offer being 6.75 cents a gallon. This offer was soon raised to 7 cents and after the crude advance to 7.50 cents a gallon.

The Sinclair Oil & Gas Co. meanwhile was in the market for grades BB and C and prices of all grades advanced accordingly. Buying from other sources was comparatively steady throughout the week and no distress goods were placed on the market.

Kerosenes

Several refiners indicated May 25 that they would advance kerosene prices 0.25 cent May 27 in view of the crude advance and a better demand for kerosenes. The prevailing quotations for 41-43 w. w. grade May 25 were 5.50 to 5.75 cents.

Several of the trade continued to anticipate a decided increase in kerosene demand the next few weeks. The two tank wagon advances on gasoline puts that price so much above kerosene tank wagon price that the farmers undoubtedly will use more kerosene in preference to gasoline. It also has been pointed out that the farmers are just now getting into their fields for steady work.

Distillates and Gas Oils

While demand for gas oils may not show much improvement as far as industrial consumers are concerned, there undoubtedly will be an increased demand for gas oil for cracking purposes. This has been brought about by the crude advance which will make gas oil and fuel oil attractive at present price levels as a charging stock from which to make cracked gasoline.

The West Texas crude advance will undoubtedly result in the refiners so equipped operating their cracking units at full capacity as soon as they are completed in order to show a return on their operations. This factor may take a considerable amount of West Texas gas oil and fuel oil off the market before fall.

Fuel Oils

Two or three refiners advanced their quotations for fuel oils 2.50 to 5 cents a gallon but the majority of Oklahoma refiners had made no changes in prices up to close of business May 25. There probably will be less effort made to move fuel oils, especially by refiners with cracking units, since at present price levels the fuel is probably a profitable cracking stock.

Neutral Oils, Cylinder Stocks

No change had been announced in prices of neutral oils and cylinder stocks prior to close of business May 25. Several refiners indicated however, that within the next few days they would issue revised quotation sheets, as a result of the crude advances.

Chicago Resale Market

Gasoline Higher as Market Settles

Staff Special
CHICAGO, May 25

THE Chicago resale market experienced one of the most hectic periods in several years in the week ended May 25. The 1-cent gasoline advance by Standard of Indiana on May 18, followed May 20 and 21 by advances in crude oil prices throughout the country and climaxed on May 23 by another 1-cent advance in gasoline by Standard of Indiana left the Chicago oil trade gasping for breath and wondering just what it was all about.

The spot gasoline market was turbulent throughout the week, with refiners advancing their prices in 0.25 and 0.50-cent jumps and most of the carlot marketers holding back on quotations until things steadied somewhat.

The spot price of most sellers on 58-60 U. S. Motor gasoline May 18 was 7.75 cents. On May 20 the majority of refiners advanced their price 0.25 cent to 8 cents, while some refiners and carlot marketers continued to ask 7.75 cents. The announcement of Prairie Oil & Gas Co.'s crude advance further unsettled the market and most sellers withdrew their quotations. Most of the sales reported on May 21, previous to this announcement, were at 7.875 to 8 cents. On May 22, the larger refiners advanced their quotations on U. S. Motor to 8.50 cents, while mar-

keters were asking 8 cents and up. At noon on May 22 the Standard announced its gasoline advance effective May 23 and again most of the trade withdrew their quotations for spot gasoline. On May 23 most of the larger refiners in Oklahoma were quoting 9 cents on U. S. Motor, while Arkansas, Louisiana and Kansas refiners quoted 9.25 cents and North and West Texas refiners were at 8.50 to 8.75 cents. The bulk of quotations on U. S. Motor in the Chicago resale market ranged from 8.50 to 9 cents on May 23, irrespective of what refinery center goods originated.

The gasoline market was considerably more settled on May 25 and most refiners were asking 9 cents for U. S. Motor. A few refiners reported sales at 8.75 cents. Several refiners announced intention to advance their spot price to 9.25 cents on May 27.

On the other hand, a number of carlot marketers were willing to sell U. S. Motor at 8.50 cents, although most of them asked 8.75 cents. The bulk of this gasoline was goods which had been purchased over May at prices ranging from 7.625 cents and up to 8 cents.

Gasolines were fairly active the first half of the week, while demand slackened considerably during the closing days. It was apparent that most jobbers had their storage full and needed some good motoring weather to lower stocks before they would be in the market very heavily.

Considerable interest was being taken in gasoline for over June delivery but most refiners were refusing to quote over this period. Carlot marketers reported being offered some Oklahoma U. S. Motor gasoline at 9 and 9.25 cents. One marketer reported buying some differential territory Motor at 8.875 cents Group 3 for delivery over June.

The higher gravity gasolines were generally quiet over the week although prices reacted upward due to the crude and tank wagon advances. Most grades were about 0.75 to a full cent higher by the end of the week.

The various crude and tank wagon changes apparently had little effect on kerosene, although prices showed a tendency to move upward during the closing days. Sales of 41-43 w.w. were reported all week at 5.50 to 5.75 cents, although a number of sellers who had quoted 5.50 cents the first part of the week, advanced to 5.625 and 5.75 cents May 24 and 25. Several sellers said they believed that the demand for kerosene would increase substantially since the gasoline tank wagon moved up.

A number of sellers reported a better tone in distillates and gas oils but prices had not as yet reflected this trend. Demand continued generally quiet. The bulk of sales of 38-40 straw distillate were at 3.375 to 3.625 cents most of the week and at 3.375 to 3.50 cents on May 25. Gas oil prices were unchanged.

One or two sellers advanced their quotations for fuel oils but prices in general were unchanged over the week. Demand continued to come mostly from industrial concerns on previously made contracts.

The 28-30 zero fuel opened May 20 at $0.875 to $0.975 and moved thereafter at $0.875 to $0.95. The ordinary grade of 28-30 moved mostly at $0.85 to $0.90.

Sinclair Buys 3 Illinois Marketing Companies

CLEVELAND, May 25. — Three marketing companies in Illinois have been purchased by the Sinclair Refining Co. They are the Corn Belt Oil Co., Bloomington; Hoopeston Oil Co., Hoopeston and Rossville; and the Mutual Oil Co., Geneseo.

An office building will be erected and other expansions will be made at the Corn Belt Oil Co. H. M. Mosely, manager for Sinclair at Decatur for seven years, has been transferred to Bloomington.

The Corn Belt Oil Co. operated 13 bulk and service stations in Bloomington, Minier, McLean, Farmer City, Colfax and Arrowsmith. The company had grown out of the Red Seal Co. in 1916. J. B. Kelly, former secretary-treasurer, will retire temporarily.

The Mutual Oil Co. operated service stations in Geneseo, Atkinson, Sheffield and Princeton.

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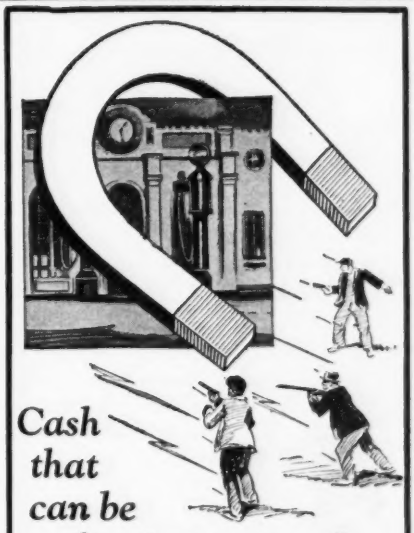

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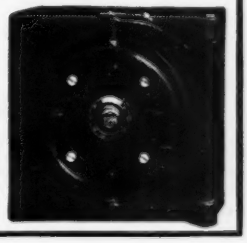

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Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

Comparative Prices of 58-60 U. S. Motor Gasoline, Group 3 and Point of Origin, to Jobbers Only

In Effect May 27

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	9.0625	(Wt. Avg.)	9.0625	(Wt. Avg.)	
Kansas	9.00-9.25				S. O. Neb & Ind. Ter., etc.
Kansas			9.2656	(Wt. Avg.)	Kansas only.
North Texas	8.625-8.75		8.50-8.75		
West Texas	8.75-9.25		8.75-9.25		
Louisiana-Ark.	9.00				Mich., Ohio & Indiana.
Louisiana-Ark.			9.25		State or differential haul.
Indiana-Illinois	9.00-9.25		*		S. O. Ind. territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rate$; no prices F.O.B. point of origin can be given.

Weighted Average Prices

OKLAHOMA

	May 27		May 20		May 13	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e. p.	72	9.0625	61	7.9037	61	7.7602
60-62 437 e. p. gasoline	11	9.3068	19	8.0197	11	8.0000
60-62 400 e. p. gasoline	1	9.5000	4	8.2813	1	8.0000
64-66 375 e. p. gasoline	1	9.7500	6	8.4583	2	8.6250

Above weighted averages reflect the effort on the part of majority of refiners to absorb a part of the recent advance in gasoline by Standard of Indiana. Quotations were sent out at 0.125 to 0.25 cent above prices prevailing prior to advance but were not effective before May 20 in most instances. Demand was comparatively good most of the week although refiners received reports from many division offices that inclement weather and floods curtailed gasoline consumption.

KANSAS

	May 27		May 20		May 13	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e. p.	16	9.2656	26	8.0000	8	8.0781

Kansas refiners advanced quotations fractionally following Standard Indiana advance and the new price levels are reflected in above weighted average. Demand was generally unchanged.

GASOLINE AND NAPHTHA

OKLAHOMA

	Prices May 27	Prices May 20	Prices May 13
48-50 450 e.p. naphtha	8.50 – 8.75	7.375– 7.625	7.375– 7.50
50-52 450 e.p. naphtha	8.50 – 8.75	7.375– 7.625	7.375– 7.50
56-58 450 e.p. gasoline	8.50 – 8.75	7.375– 7.625	7.375– 7.50
58-60 450 e.p. gasoline	8.50 – 8.875	7.375– 7.625	7.375– 7.625
64-66 390 e.p. gasoline	9.00 – 9.125	8.25 – 8.50	8.75 – 9.00
68-70 350-360 e.p. gasoline	9.25 – 9.75	8.75 – 9.00	8.625– 8.75

†Prices nominal ††Only one refiner quoting *Quotations only

PENNSYLVANIA

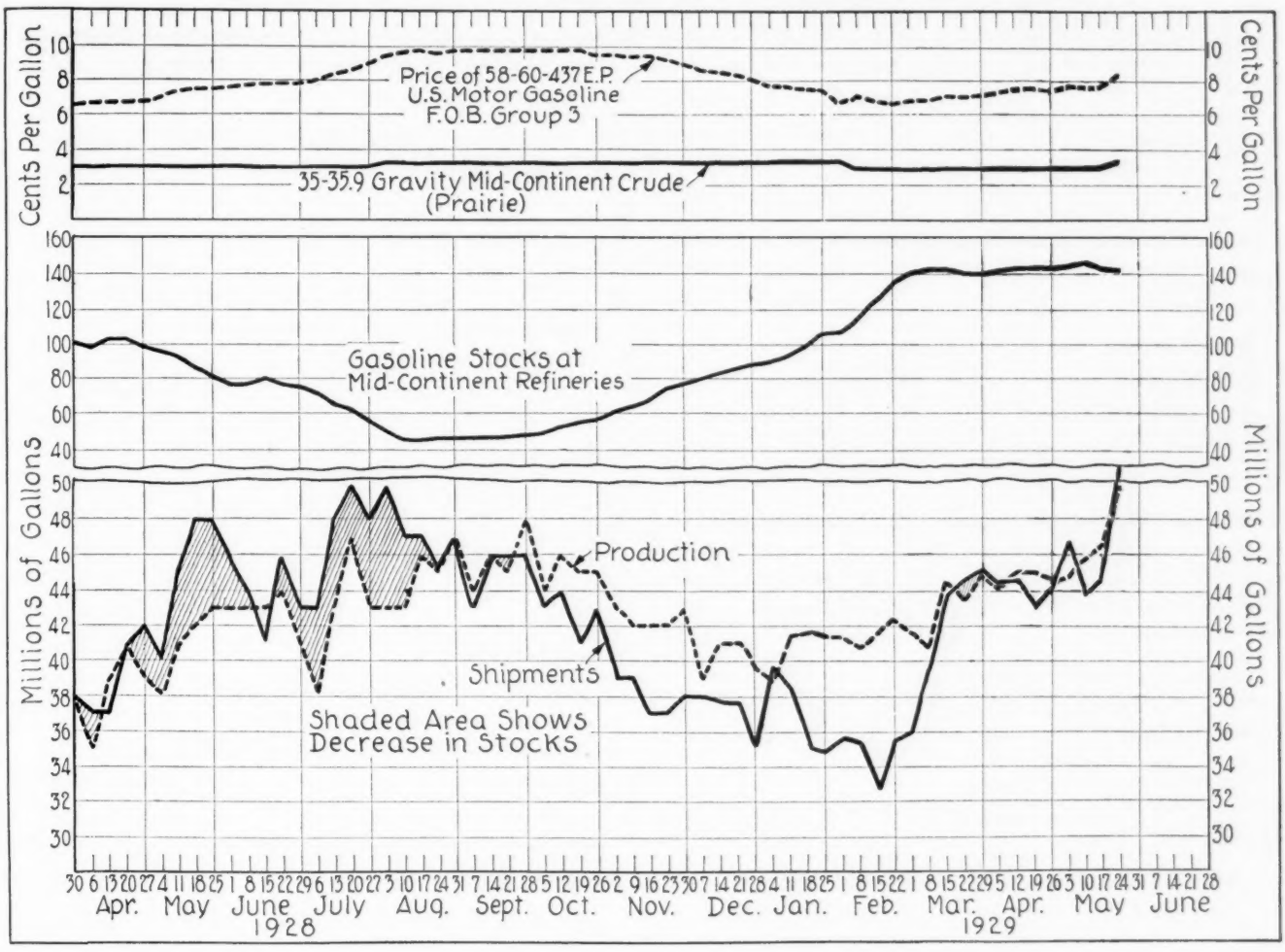
	Prices May 27	Prices May 20	Prices May 13
52-54 Naphtha	9.00 – 9.50	8.75 – 9.00	8.875– 9.00
54-56 Naphtha	9.00 – 9.50	8.75 – 9.00	9.00 – 9.50
58-60 U.S. Motor 437 e.p.	9.75 –10.25	9.25 – 9.75	9.50 – 9.75
60-62 400-410 e.p. gasoline	10.00 –10.50	9.75 –10.25	9.75 –10.25
64-66 390 e.p. gasoline	10.50 –11.00	10.50 –11.00	10.50 –11.00
68-70 Str-run gas 350-360 e.p.	11.50 –12.25	11.50 –12.00	11.50 –12.00

(Continued on Page 106)

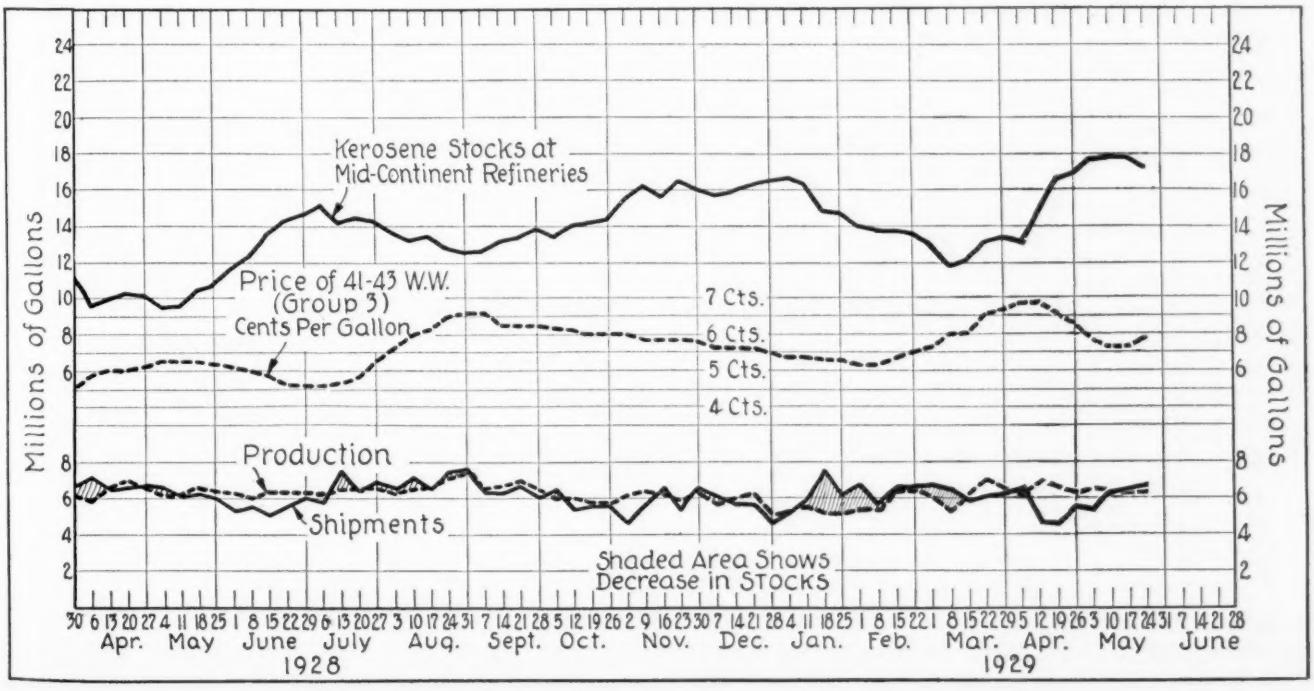
**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending May 24

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 98.



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)
U. S. Motor Gasoline

	Prices May 27	Prices May 20	Prices May 13
Cincinnati	11.25	11.25	11.25
Cleveland, Toledo, Lima, within refinery switching area	11.25	11.25	11.25
Elsewhere in Ohio	11.50	11.50	11.50
KANSAS (F. O. B. refinery Kansas destination)			
60-62 437 e.p. gasoline	9.00 – 9.50	8.00 – 8.125	8.00 – 8.125
60-62 400 e.p. gasoline	9.50 –10.00	8.125– 8.375	8.125– 8.375
64-66 375 e.p. gasoline	9.75 –10.00	8.50 – 8.625	8.50 – 8.625
NORTH TEXAS			
48-52 450 e.p. naphtha	8.25	7.125– 7.25	†7.125– 7.25
56-58 450 e.p. gasoline	8.25	7.125– 7.25	7.125– 7.25
58-60 450 e.p. gasoline	8.25	7.125– 7.25	7.125– 7.25
58-60 U.S. Motor 437 e.p.	8.75 – 9.00	7.50 – 7.75	7.375– 7.50
60-62 400 e.p. gasoline	9.00	7.75 – 8.00	7.75
64-66 390 e.p. gasoline	9.00 – 9.25	8.00 – 8.125	7.75 – 8.00
64-66 375 e.p. gasoline	9.25 – 9.50	8.00 – 8.25	8.00
68-70 350-360 e.p. gasoline	9.25 – 9.50	8.25 – 8.50	8.25 – 8.375
****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**			
50-52 naphtha	8.00 – 8.25	7.25 – 7.50	7.00 – 7.25
56-58 437 e.p. gasoline	8.25 – 8.50	7.50	7.25 – 7.50
58-60 437 e.p. gasoline	8.75 – 9.25	7.50 – 7.625	7.375– 7.50
NORTH LOUISIANA (N. La., Ark., and Miss. destination)			
58-60 U.S. Motor gasoline	9.25	8.00	8.00
ARKANSAS (Arkansas destination only)			
58-60 450 e.p. gasoline	9.00	7.75 – 8.00	7.75
58-60 U.S. Motor 437 e.p.	*9.25	8.00	8.00
61-63 390 e.p. gasoline	††9.625	††8.75	††8.75
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	7.25 –10.50	7.25 –10.50	8.00 – 9.00
58-61 375-400 e.p. gasoline	8.25 –11.50	8.25 –11.50	8.50 –10.50
42-45 Eng. dis. 445-480 e.p.	7.00 – 8.50	7.50 – 9.00	8.00 – 9.00

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA

Grade AA, 80-87.9, 90% Recovery	7.50 – 8.00	6.75	7.25 – 7.50
Grade A, 72-79.9, 90% Recovery	7.50 – 8.00	6.75	7.25 – 7.50
Grade BB, 84-92, 85% Recovery	7.25 – 7.375	6.25	6.75 – 6.875
Grade B, 76-83.9, 85% Recovery	7.25 – 7.375	6.25	6.75 – 6.875
Grade C, 80-90, 78% Recovery	7.00 – 7.25	6.25	6.75 – 6.875

Offers to buy; no sales reported.

NORTH TEXAS (F. O. B. Breckenridge)

Grade AA, 80-87.9, 90% Recovery	7.50 – 8.00	6.75	7.25 – 7.50
Grade A, 72-79.9, 90% Recovery	7.50 – 8.00	6.75	7.25 – 7.50
Grade BB, 84-92, 85% Recovery	7.25 – 7.375	6.25	6.75 – 6.875
Grade B, 76-83.9, 85% Recovery	7.25 – 7.375	6.25	6.75 – 6.875
Grade C, 80-90, 78% Recovery	7.00 – 7.25	6.25	6.75 – 6.875

Offers to buy; no sales reported.

NORTH LOUISIANA (F. O. B. Monroe District)

Grade AA	†8.00	†6.875	†7.625
Grade BB	†7.50	†6.375	†7.125
Grade C	†7.375	†6.375	†7.125

CALIFORNIA

75-85, 375-390 e.p. blend	9.00 – 9.50	8.50 – 9.00	8.00 – 8.50

MOTOR FUEL BLENDS

OKLAHOMA

	Prices May 27	Prices May 20	Prices May 13
64-66 Blend 437 e.p.	8.00	7.375	No quotations

BURNING OILS

PENNSYLVANIA

45 w.w. kerosene	7.00 – 7.50	7.00 – 7.50	7.25 – 7.50
46 w.w. kerosene	7.25 – 7.75	7.375– 8.00	7.50 – 8.00
47 w.w. kerosene	7.75 – 8.25	7.875– 8.25	8.00 – 8.75
300 mineral seal	7.75	7.75	7.50 – 8.00
OKLAHOMA			
41-43 w.w. kerosene	5.75 – 6.00	5.50 – 5.75	5.50 – 5.75
42-44 w.w. kerosene	6.25 – 6.50	6.00 – 6.25	6.00 – 6.25
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
42-44 w.w. kerosene	6.50	6.50	6.50
NORTH TEXAS			
40-42 w.w. kerosene	5.25	5.25	5.25
41-43 w.w. kerosene	5.375– 5.625	5.25 – 5.50	5.25 – 5.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene	6.50	6.50	6.50 – 6.75
42-44 w.w. kerosene	6.75	6.75	6.75
ARKANSAS (Arkansas destination only)			
42-44 kerosene	.....	6.75	6.75
CALIFORNIA			
38-40 w.w. kerosene	5.50 – 6.00	5.00 – 6.00	5.25 – 6.00

NEUTRAL OIL

PENNSYLVANIA

Vis.	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	29.00 –30.00	29.00 –30.00	29.50 –30.00
180 No. 3 Assoc. Filt.	25.00 –27.00	25.00 –27.00	25.50 –28.00
150 No. 3 Assoc. Filt.	21.00 –22.00	21.00 –22.00	21.50 –23.00
(Non Viscous)			
34 Grav. 330-340 Flash	7.50 – 8.00	7.75 – 8.00	7.00 – 8.50

****OKLAHOMA**

Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	5.50 – 6.50	5.50 – 6.00	5.50 – 6.00
150	No. 3	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
150	No. 4	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
180	No. 3	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
180	No. 4	8.75 – 9.75	8.75 – 9.75	8.75 – 9.75
180	No. 5	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200	No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200	No. 4	9.00 –10.25	9.00 –10.25	9.00 –10.25
200	No. 5	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
220	No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220	No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220	No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240	No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
240	No. 4	12.00 –13.00	12.00 –13.00	12.00 –13.00
240	No. 5	11.00 –13.00	11.00 –13.00	11.00 –13.00
280	No. 3	14.00 –16.00	14.00 –15.50	14.00 –15.50
280	No. 4	13.00 –15.00	13.00 –14.00	13.00 –14.00
280	No. 5	12.00 –14.00	12.00 –13.00	12.00 –13.00
300	No. 5-6	16.00 –17.00	16.00 –17.00	15.00 –17.00

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations ***Represents quotations and offers to buy

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis.	Color	Prices May 27	Prices May 20	Prices May 13
		(Viscosity at 100°F., pour test 0)		
100	No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200	No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
300	No. 3 Pale	10.00 –10.50	10.00 –10.50	10.00 –10.50
500	No. 3½ Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
750	No. 4 Pale	13.00 –13.50	13.00 –13.50	13.00 –13.50
200	No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300	No. 5½ Red Oil	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
500	No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750	No. 6 Red Oil	12.00 –12.50	12.00 –12.50	12.00 –12.50

CALIFORNIA

Vis.	Color			
		(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. at 210° Brt. St.	35.00 –37.00	35.00 –36.00	35.00 –36.00
150-160 Vis at 210° Brt. St.	33.00 –35.00	33.00 –34.50	33.00 –34.50
600 E. St. 140-150 Vis.-210°	28.00 –30.00	18.00 –20.00	18.00 –20.00
600 St. Ref. Olive Green	15.00 –18.00	14.00 –18.00	12.00 –14.00
600 St. Ref. Dark Green	13.00 –16.00	11.00 –13.00	11.00 –13.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	33.50 –35.00	35.00 –37.00	36.00 –37.00
650 Steam Refined	39.50 –41.00	41.00 –42.00	42.00 –43.00
600 Flash	42.00 –43.00	42.00	45.00
625 Flash	45.00	No quotations	No quotations
600 Warren E	37.00 –38.00	37.00 –38.00	37.00 –38.00
600 Oil City E	36.00 –37.00	36.00 –37.00	36.00 –37.00
600 D Filtered	40.00	40.00	41.00
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	55.00 –58.00	54.00 –58.00	54.00 –58.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	54.00 –56.00	54.00 –56.00	53.00 –56.00

WAX

PENNSYLVANIA Per pound, New York

122-124 white crude scale, a. m. p.	3.00	3.25 – 3.50	3.25 – 3.50
124-126 white crude scale, a. m. p.	3.00	3.25	3.25 – 3.75

OKLAHOMA

**124-126 White Crude Scale, a. m. p.	3.00 – 3.25	3.00 – 3.25	3.375– 3.50

CALIFORNIA

White crude scale, per pound, ton lots, a. m. p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

	Prices May 27	Prices May 20	Prices May 13
36-40 fuel oil	5.125– 5.50	5.375– 5.625	5.375– 5.75
30-34 fuel oil	4.625– 4.875	4.625– 4.875	4.75 – 5.00
28-32 fuel oil	4.625– 4.875	4.625– 4.875	4.75 – 5.00

OKLAHOMA

38-40 straw distillate	†3.25 – 3.375	†3.25 –†3.375	†3.375– 3.50
36-38 straw distillate	†3.125– 3.25	†3.125– 3.25	†3.25 – 3.375
32-36 gas oil, straw	2.50	2.50	2.50
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 zero gas oil	2.50	2.50	2.50
28-30 fuel oil (in bbls.)	$0.875– 0.95	$0.85 – 0.90	$0.85 –$0.90
28-30 zero fuel oil	$0.85 – 0.90	$0.875– 0.95	
26-28 fuel oil (in bbls.)	$0.65 – 0.725	$0.65 – 0.725	$0.65 – 0.725
24-26 fuel oil (in bbls.)	$0.625– 0.675	$0.625– 0.675	$0.625– 0.675
22-26 fuel oil (in bbls.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
18-22 fuel oil (in bbls.)	$0.525– 0.575	$0.525– 0.575	$0.525– 0.575
16-18 fuel oil (in bbls.)	$0.50 – 0.55	$0.50 – 0.55	$0.50 – 0.55
14-16 fuel oil (in bbls.)	$0.45 – 0.50	$0.45 – 0.50	$0.45 – 0.50

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	3.375– 3.50	3.50	3.50
36-38 straw distillate	3.25 – 3.375	3.375	3.375
32-36 gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
24-26 fuel oil	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
18-22 fuel oil	$0.625– 0.70	$0.625– 0.70	$0.625– 0.70

NORTH TEXAS

38-40 straw distillate	3.25 – 3.375	3.25 – 3.375	3.50
32-36 gas oil, cracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 St. reduced gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
24-26 fuel oil (in bbls.)	$0.60 – 0.65	$0.60 – 0.65	$0.60 – 0.65
20-24 fuel oil	$0.625– 0.65	$0.625–$0.65	$0.65

**WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
30-32 gas oil	2.00	1.875– 2.00	1.875– 2.00
18-22 fuel oil	$0.30	$0.30	$0.30

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.00	3.00	3.00
32-36 gas oil, straw	3.00	3.00	3.00
10-14 fuel oil (in bbls.)	$0.70	$0.70	$0.70 – 0.75

ARKANSAS (Arkansas destination only)

32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
28-30 gas oil	2.75	2.75	2.75

CALIFORNIA (F. O. B. San Joaquin Valley. At. San Francisco, 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.55 –$0.65	$0.55 –$0.65	$0.55 –$0.65
14-18 Bunker oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.80	0.70 – 0.80
30-34 gas oil (per bbl.)	$0.90 –$1.05	$0.90 –$1.05	$0.90 –$1.05
27 Plus Diesel oil (per bbl.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50 – 7.625	7.50 – 6.625	7.50 – 7.625
Cream White	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625
Light Amber	3.625	3.625	3.625
Amber	3.375	3.375	3.375
Red	3.125	3.125	3.125

PETROLEUM COKE

**OKLAHOMA

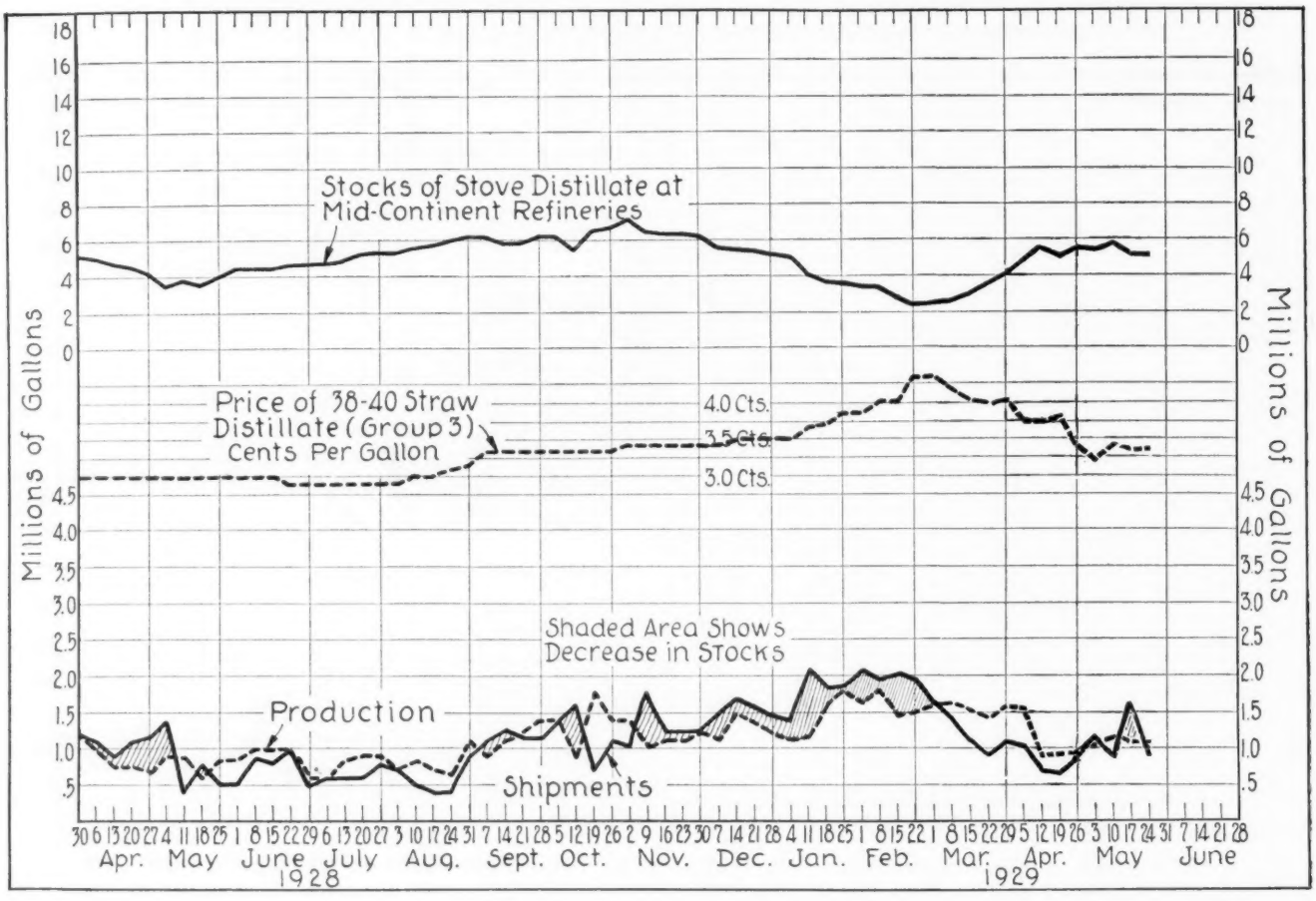
(Per ton in car lots)

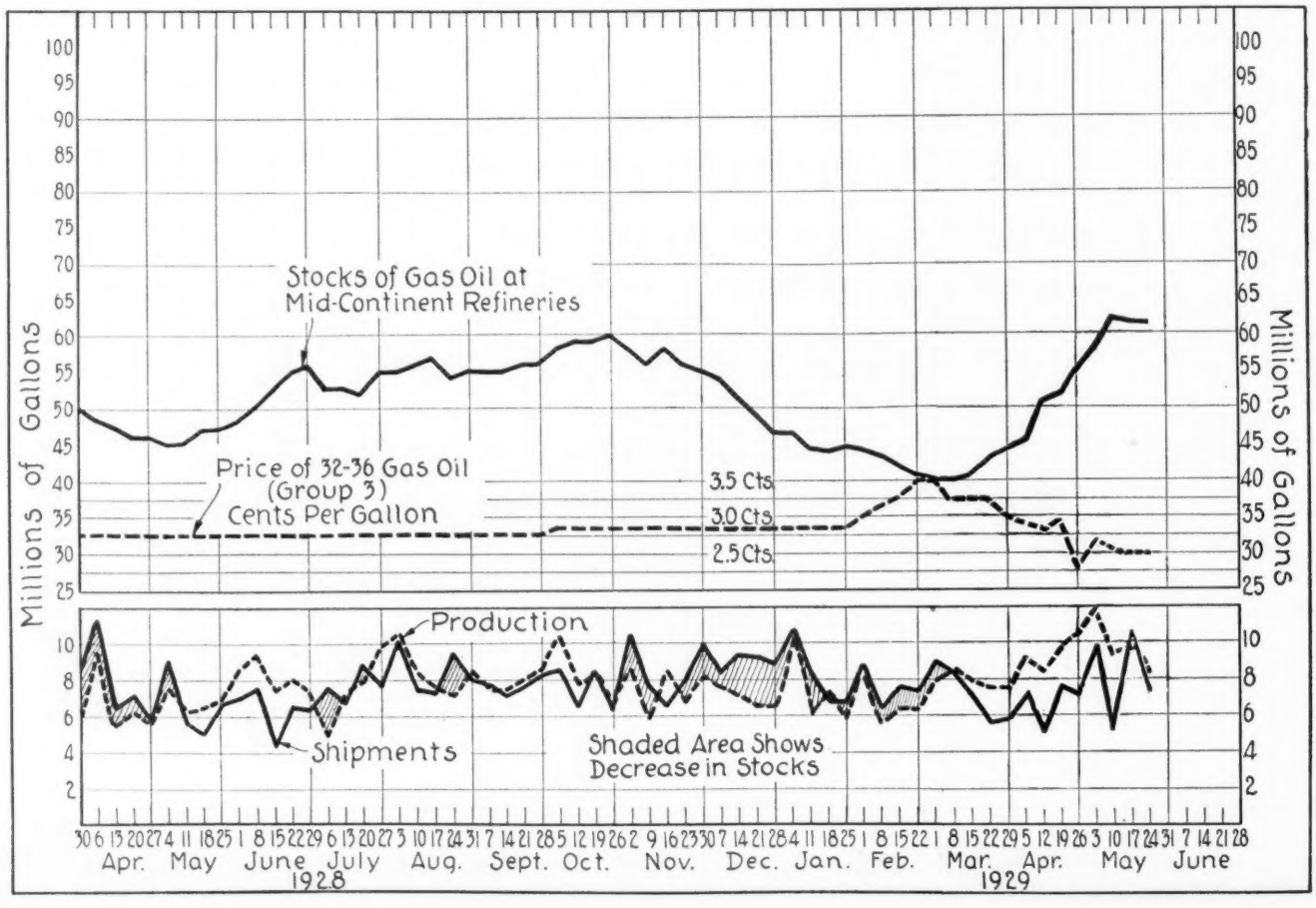
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents both sales and quotations

Barometer of Mid-Continent Refinery Market—Week Ending May 24

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shaded Area Shows Decrease in Stocks
Production
Shipments
Millions of Gallons
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929


Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Millions of Gallons
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

SALES POSSIBILITIES

When it comes to potential motor oil gallonage, the Shell Motor Oil jobber or dealer has an unequalled opportunity because he has two powerful influences on his side:—

The popularity of Shell Motor Oil —to win the motorist's business.

The quality of Shell Motor Oil— to hold the motorist's business.

The sales possibilities of this combination are proven by the fact that jobbers handling Shell Motor Oil were able to sell more than three times as many gallons during the year 1928 as they did in 1927.

It is not too late to ride to success with Shell Motor Oil—a limited number of franchises are still open.

SHELL MOTOR OIL

SHELL PETROLEUM CORPORATION • • SHELL BLDG. • • SHELL CORNER • • ST. LOUIS

Branch Offices: Chicago, Ill. • • Cleveland, Ohio • • Kansas City, Mo. • • Tulsa, Okla.

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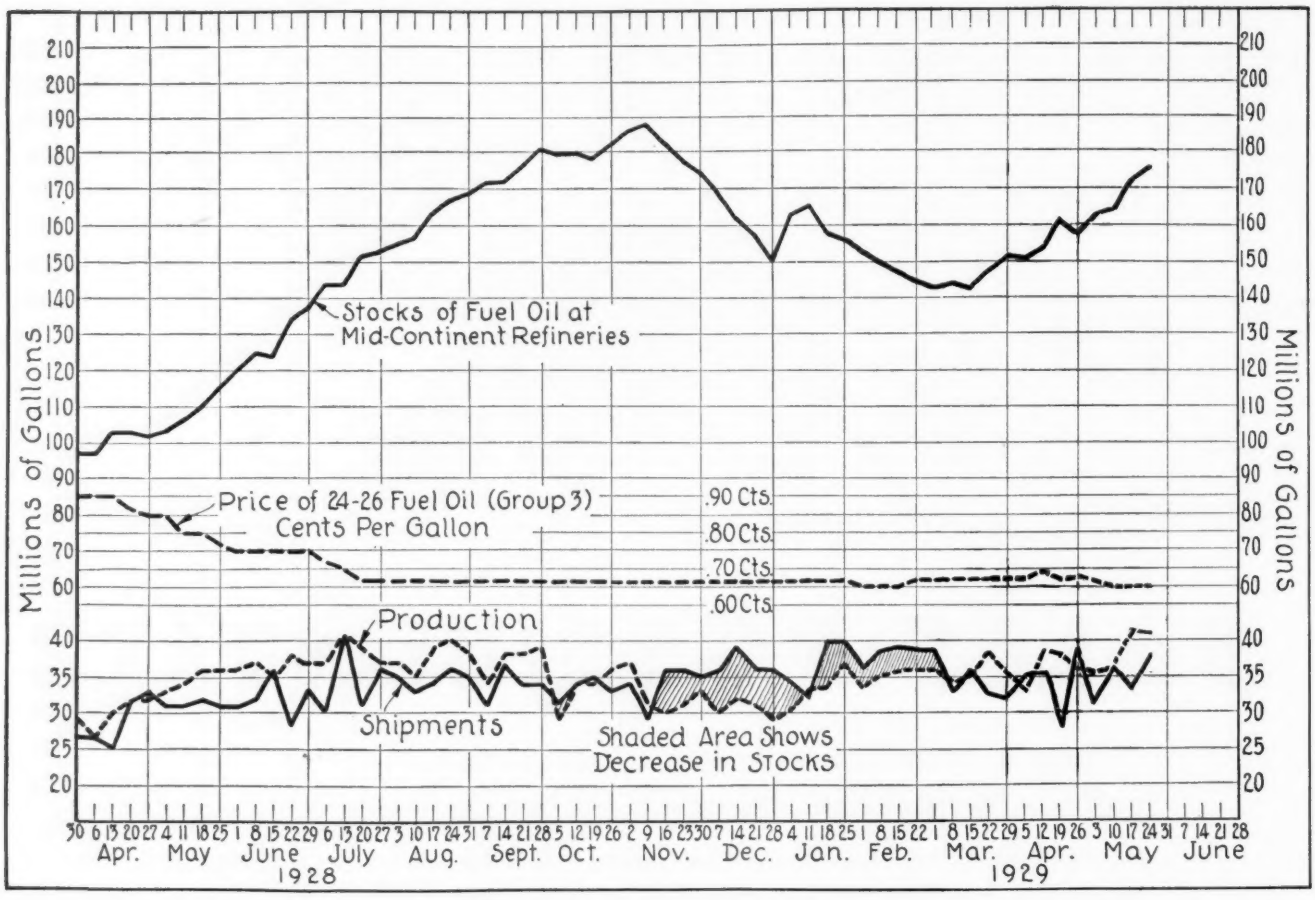

Millions of Gallons
Millions of Gallons
Stocks of Fuel Oil at Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) Cents Per Gallon
.90 Cts.
.80 Cts.
.70 Cts.
.60 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

California Refinery Market

Export Gasoline Quiet; Naturals Scarce

LOS ANGELES, May 27

PRICES and market conditions on the Pacific Coast showed little change during the past week. A number of promising inquiries were reported but of this number few resulted in sales.

Local exporters were optimistic over the chances of some active business as a result of an expected rise in the price of U. S. Motor on the eastern seaboard to be brought about by the recent advance in the price of Mid-Continent crude.

Refiners were obtaining 9.50 to 10.50 cents per gallon for U. S. Motor intended for instate consumption, this price does not include tax. Some showed no desire to sell at these prices but were storing against an expected advance in the local tank wagon price.

Out of state gasoline was being quoted at from 7.50 to 8 cents. Two tank cars were sold for Arizona delivery at a price of 8 cents. Continental Oil Co. is rumored to be contemplating an advance of one cent in the Utah tank wagon price and is reported to be in the market for considerable California gasoline.

Shortage of casinghead gasoline, caused by the shutting-in of many Los Angeles Basin wells in accord with present proration plans, has made this commodity in great demand. One broker was very anxious to obtain some absorption gasoline, but was having a great deal of difficulty as the major companies are reported to have contracted for all they can get.

Kerosene continued inactive although the price was up to from 5.50 to 6 cents as compared with 5 to 6 cents asked last week.

Remaining refinery products held steady even though sellers reported the demand to be very light.

Southern California marketing officials are of the opinion that the local retail market conditions are in the best shape that they have been for a long time. Major company gasolines have maintained the price of 19½ cents for nearly two weeks and it is rumored that the service station price will soon be boosted to 20½ cents. A few independents still maintain a price beneath that of the majors.

Pennsylvania Market

Gasoline Active, Higher

CLEVELAND, May 27.—Pennsylvania gasoline prices advanced approximately 0.5-cent last week under the stimulus of better spot demand. Kerosene was off a shade and cylinder stocks eased up somewhat. Bright stocks were active with prices generally unchanged. Wax dropped 0.25-cent with buying still at low ebb.

Summerlike weather last week had the long anticipated effect on the gasoline market. Jobber buying was

more active both for spot and deferred shipment. U. S. Motor gasoline at 9.25 to 9.50 cents disappeared from the market about Friday and thereafter 9.75 cents was the minimum quotation made for spot shipment. Several sellers were quoting 10 to 10.25 cents for spot and some business was reported placed at these prices.

In the majority of cases refiners were asking 0.5-cent higher for shipment over the first half of June than they quoted for spot delivery. The general quotation over this period was 10.50 cents. One large refiner, however, reported he had sold his first half of the month output at 10 cents.

Kerosene failed to respond to improved weather conditions. Prices generally were off 0.25-cent. The 45 w.w. grade was freely offered at 7 cents although some sellers continued to ask as high as 7.50 cents.

Fuel oil demand was somewhat slower last week and prices receded as a result. Straw color 36-40 fuel oil was offered by several large sellers at 5.125 cents the last few days of the week. They reported there were few takers even at this price which is approximately 0.375-cent under the low of the previous week.

Steam refined stocks were much more freely offered last week. Prices of one or two grades were down about 0.5-cent; 600 stock was quoted by several sellers at 33.50 to 34 cents; 600 flash was available at 42 cents.

Demand for bright stock continued good and most of the relatively low priced stuff that has been offered recently was eliminated from the market. Light bright at 54 cents was taken up and 55 cents was the minimum quotation reported May 25. Several manufacturers were asking as high as 58 cents.

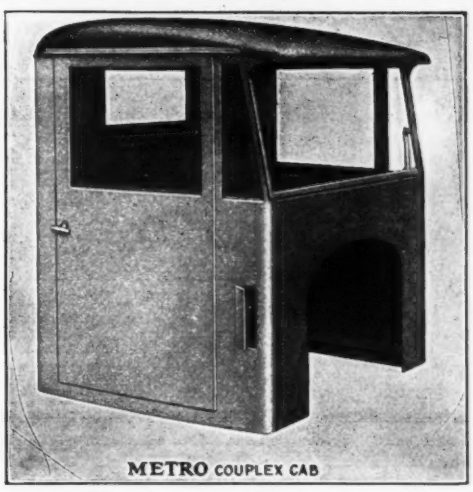
Wax was quoted at 3 cents a pound, New York, by the majority of active sellers. Bids from New York dealers were 0.125 cent lower.

Gulf Coast Lubes Stiffer

HOUSTON, May 27.—Gulf Coastal lubricant markets stiffened in response to a 10 cent a barrel advance on "A" grade crude on May 21, but list prices had failed to reflect the advance at the end of the week.

One manufacturer had reduced his list prices on most grades a few days before the crude advance, and another had been selling lubricants made from non-Coastal competitive crudes at ranges which prevented prompt revisions of schedules.

Adjustments mentioned left lubricant prices virtually unchanged from the prices published in the May 22 issue of NATIONAL PETROLEUM NEWS, in the face of the usual practice of advancing lubricants approximately one-half cent a gallon for each 10 cent a barrel increase in crude prices.



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Made to stay in gasoline; simple, safe, economical.

Several Shades of

RED GREEN BLUE

ORANGE PURPLE

Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, INCORPORATED

11th & Monroe Sts. St. Louis, Mo.

New York Domestic Market

Gasoline Prices Cover Wide Range

Staff Special

NEW YORK, May 25

AN UNSETTLED market in which quotations were as much as a full cent apart, prevails along the eastern seaboard at the close of the week ended May 25. At New York sellers were quoting from 9 to 10 cents with the division about equal at each price. Some refiners were quoting 9.25 and 9.50 cents, while others had withdrawn from the market. At other points with the exception of Baltimore, where the price on U. S. Motor was 9.50 to 10 cents, refiners were quoting 10 cents flat. New England prices were higher.

The market became unsettled Tuesday when the Standard Oil Co. of New Jersey announced its tank car quotation for U. S. Motor, effective immediately, would be 10 cents at all points where it marketed gasoline. Some companies remained at 9 cents and were emphatic in stating that was their price. Others were undecided as to what action they would take and some immediately advanced quotations in line with the Standard company. The day's activities simmered down with about five companies quoting 9 cents, the same number quoting 10, two obtaining the average, and four, including a large refiner, undecided.

At the same time regular U. S. Motor was advanced at New York, sellers of California gasoline announced revisions in their spot price schedules. One company's price was 10.50 cents, another was at 10 cents and two remained at 9.50 cents, although they were not sure but what their prices on the following day would be raised to meet the highest quotation. However, the latter two had made no changes Saturday, although one of them announced that effective May 27, his price would be 10 cents both at New York and Philadelphia.

One seller who believed the market 9 cents reported the day the advance was made that he had 38 cars at New York which he would dispose of at that figure. May 25 he was still holding 26 cars at the same price and reported he wasn't being "run over" by buyers. However, he also said that Monday he might advance his price. He was not sure what the price might be nor was he sure that he'd make the advance. "If the market warranted it, he would," was the way he put it.

Those who advanced their prices were of course as strong in the defense of the 10-cent figure as the 9-cent sellers were in condemning it. One refiner said the morning after the 10-cent price became effective he had turned down an offer of 9.625 cents a gallon for U. S. Motor to be shipped immediately into New England. He turned it down, he said, because he "knew he could get more money for it." Other sellers reported that they did not want to "be a drag on the market" and that 10 cents would be their price until the market levelled out.

Disregarding prices, all sellers admitted the spot market was slow, as usually is the case toward the latter part of the month. Contract goods were moving well, in keeping with the good motoring weather which has been prevailing along the seaboard most of the week, and it was the opinion of many of the trade that there would be no 9-cent gasoline available in a few days. Some have even predicted 11-cent gasoline before the middle of June. None of the 10-cent sellers have reported any sales at the new figure as yet.

Gulf Export Market

French Seek 175,000 Bbls. Gasoline

Staff Special

NEW YORK, May 25

AFTER being inactive for the past two weeks, foreign buyers took an interest in the market toward the close of the week ended May 25, entering inquiries for three cargoes. One cargo was placed earlier in the week. Prices on all commodities were unchanged with the exception of gas oils and Panuco crude oil.

The one cargo placed the week of May 20-25 specified approximately 65,000 barrels of 64-66, 375 end point gasoline, U. S. Motor and 41-43 prime white kerosene for immediate loading from north Atlantic port. The inquiry came into the market about two weeks ago from the French subsidiary of a leading Independent refiner.

Three more inquiries from French buyers were entered in the market toward the last of the week, one of them being received by an American supplier May 24, and the other two being received May 25. The first was for approximately 50,000 barrels of 41-43 prime white kerosene, 64-66, 375 end point gasoline and 61-63, 390 end point gasoline, for prompt loading. The other two were for loading the latter part of July. One involved approximately 75,000 barrels of 64-66, 375 end point gasoline and the other approximately 50,000 barrels of U. S. Motor and 64-66, 375 end point gasoline. Both of the latter cargoes were expected to be placed some time during the week of May 27-31.

Gas oils were reported more active and cargoes of low sulfur goods were reported unobtainable under 4 cents. A flat price of 4 cents was quoted for 26-30 grade, while quotations ranged from 4 to 4.125 cents on 30 plus.

Bulk suppliers expected to see higher prices for gasolines all during the week, but the same prices which were in effect the past two or three weeks were governing sales May 25. There was a report out two weeks ago that gasolines would be advanced from 0.25 to 0.50 cent per gallon by the Petroleum Export Assn., as the market was in excellent shape and prices were advancing in other fields. Since the recent crude oil advances in virtually all sections of the United States, that report has given way to another. One supplier who is well informed on prices said the Association was expected to advance prices May 27, from 1 to 2 cents per gallon.

Previous to the crude advance it was reported the Association would reduce kerosene prices for export, but that idea also has been cast aside and now the trade feels that if there is no advance in kerosene prices, the market will hold at about present levels.

Inquiry developed that while the maximum 2-cent advance on gasoline would be quite a boost, approximately 26 per cent of the present price of U. S. Motor, it was not too much to expect in comparison with prices in other districts. In Oklahoma 58-60 U. S. Motor is being generally quoted at 9 cents, 0.50 cent above the present export quotation.

Wax Market

White Crude Scale Lower

NEW YORK, May 25.—Lower prices for low melting point and yellow crude scale waxes, were again noted at the close of the week ended May 25. Buying during the week has been on a small scale both as to amounts and the number of purchases made.

White crude scale May 25 was selling at 2.875 to 3 cents, with one seller reporting he had purchased an order of 75 tons from the Mid-Continent at 2.75 cents. Sales of yellow crude scale were checked at 2.875 cents and quotations were being made on 123-125 A.m.p. and 125-127 A.m.p. wax at 4 to 4.125 cents, prices on all three grades being an 0.125 cent lower than the week previous. Fully refined 128-130 A.m.p. also was lower by an 0.125 cent, being quoted at 4.50 to 4.625 cents. Other grades were unchanged in price although there was little activity in the higher melting points.

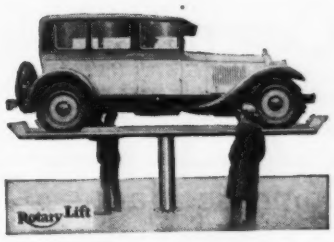
One refiner Saturday reported he was receiving quite a number of inquiries from abroad but he believed buyers had circulated these inquiries more to find out the condition of the market, than to make purchases. Some of the inquiries contained offers for goods which were much lower than his idea of the market. He reported a sale of 50 tons of yellow crude scale at 2.875 cents, for shipment to England.

The seller who reported the purchase of 75 tons of 124-126 white crude scale which, several of the trade said was a "very good buy," also sold several "small orders" during the week at 3 cents. He claimed business was slow with most of the goods moving to the United Kingdom and South America. A few inquiries were originating in Belgium and Germany. Another seller reported a sale of 50 tons of white crude scale at 2.875 cents.

Prices at New Orleans have been reported slightly higher than those in the New York export market. One seller claimed that it was possible to obtain 0.25 cent more there for white crude scale.

POLK CITY, Ia.—Elmer Koch is installing two 15,000-gallon tanks at Madrid, Ia., which will be operated as the Home Oil Co. Mr. Koch's headquarters are at Polk City.

Milestone Meter System, Inc., Cleveland has just completed a fifty per cent addition to its plant, according to W. E. Milestone, president and general manager.



The Significance of the Rotary Lift Trade Mark

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1st It is a guarantee of quality in materials, construction and workmanship upon which he can rely. Rotary Lift is built from the highest quality steel and certified malleable iron only. It is constructed in our own factory by skilled workmen under the supervision of experienced automobile lift engineers.

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ALLISON COUPON COMPANY
INDIANAPOLIS, INDIANA

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	May 27	May 20	May 13
New York harbor	9.00 –10.00	9.00 – 9.50	9.00 – 9.25
Portland district	**12.00	**11.375–11.50	**11.375–11.50
Boston district	**11.50	**10.875–11.00	**10.875–11.00
Providence district	**11.50	**10.875–11.00	**10.875–11.00
Philadelphia district	10.00	9.00 – 9.50	9.00 – 9.50
Baltimore district	10.00	9.00 – 9.50	9.00 – 9.50
Norfolk district	10.00	9.00 – 9.50	9.00 – 9.50
Charleston district	10.00	9.00 – 9.50	9.00
Savannah district	10.00	9.00 – 9.50	9.00
Jacksonville district	10.00	9.00 – 9.50	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	10.00 –10.50	9.50	9.50
Philadelphia district	10.00	9.50	9.50
Baltimore district	10.00	9.50	9.50
WATER WHITE KEROSENE			
New York harbor	8.00	8.00	8.00
Philadelphia district	8.00	8.00	8.00
Baltimore district	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL†			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10
MEDICINAL OILS, RUSSIAN			
885-890 s.g. 325-330 vis.	$0.75 – 0.80	$0.75 – 0.80	$0.75 – 0.80
870-875 s.g. 150-155 vis.	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70

Note: Above gasoline prices do not include inspection tax levied in some states
*Minimum delivered. **Delivered prices. †Lighterage 5c per bbl. additional

New York Export Market

(Lubricating oils are per gal. in bbls.)

	May 27	May 20	May 13
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	*60.00 –62.00	*58.00 –62.00	*62.00 –63.00
600 D filtered	No quotations	*48.00	*48.00
600 Warren E filtered	*44.00 –47.00	*44.00 –47.00	*44.00 –46.00
600 s.r. unfiltered	*42.00 –43.00	*42.00 –43.00	*40.00 –43.00
550 s.r., unfiltered	*48.00 –50.00	*48.00 –50.00	*48.00
600 flash, s.r.	*52.00	*52.00	*50.00 –51.00
630 flash, s.r.	*54.00 –56.00	*54.00 –56.00	*53.00 –54.00
*Nominal			
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00
250 vis. No. 6 color	18.00 –19.00	18.00 –19.00	19.50
200 vis. No. 6 color	16.00 –18.00	16.00 –18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	33.00	33.00	33.00
500 vis. No. 6½ color	31.00	31.00	31.00
400 vis. No. 7¼ color	30.00	30.00	30.00
300 vis. No. 6 color	29.00	29.00	29.00
200 vis. No. 6 color	28.00	28.00	28.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	2.875– 3.00	3.00 – 3.25	3.375– 3.625
124-126 A.m.p.	2.875– 3.00	3.00 – 3.25	3.375– 3.625
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.00 – 4.125	4.00 – 4.25	4.375– 4.625
125-127 A.m.p.	4.00 – 4.125	4.00 – 4.25	4.50 – 4.625
128-130 A.m.p.	4.50 – 4.625	4.625– 4.75	4.625– 5.00
130-132 A.m.p.	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
133-135 A.m.p.	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
135-137 A.m.p.	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
YELLOW CRUDE SCALE			
124-126 A.m.p.	2.875	2.875– 3.00	3.25 – 3.50

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

GASOLINE	May 27	May 20	May 13
U. S. Motor	8.50	8.50	8.50
60-62 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.75	$1.75	$1.75
64-66, cases (cargoes)	$1.90	$1.90	$1.90
KEROSENE			
44 water white	8.75	8.75	8.75
41-43 prime white	7.75	7.75	7.75
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	4.00	3.875– 4.00	3.875– 4.00
*30 plus translucent gas oil	4.00 – 4.125	4.00	4.00
Grade C bunker oil	$0.95 –$1.00	$0.95 –$1.00	$0.875–$0.95
Grade C bunker oil, cargoes	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.80
*Less than ½ of 1% sulfur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.60	$0.60	$0.65
Grade C bunker oil, for bunkering purposes, taxes paid	$0.95 –$1.00	$0.95 –$1.00	$0.85
SOUTH TEXAS LUBRICATING OILS, (Viscosity at 100° F.(cold test 0) (Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
200 vis. No. 3 unfiltered pale	8.00 – 9.50	8.00 – 9.00	8.00 – 9.00
300 vis. No. 3 unfiltered pale	9.00 –10.50	9.00 –10.00	9.00 –10.00
500 vis. No. 3½ unfiltered pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
750 vis. No. 4 unfiltered pale	13.00 –14.00	13.00 –13.25	13.00 –13.25
1200 vis. No. 5 unfiltered pale	16.00 –17.00	16.00 –17.00	16.00 –17.00
200 vis. No. 5-6 red oil	8.50 – 9.00	7.50	7.50
300 vis. No. 5-6 red oil	9.50 –10.50	8.50 – 9.00	8.50 – 9.00
500 vis. No. 5-6 red oil	11.50 –12.50	9.50 –10.50	9.50 –10.50
750 vis. No. 5-6 red oil	16.50 –17.00	11.50 –12.00	11.50 –12.00
1200 vis. No. 5-6 red oil		16.50	16.50

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	May 27	May 20	May 13
U. S. Motor gasoline	8.00	8.00	8.00
41-43 w.w. kerosene	7.25	7.25	7.25
*26-32 translucent gas oil	4.00	4.00	4.00
*Less than ½ of 1% sulfur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 27	May 20	May 13
Gasoline, U. S. Motor, 53-55 Gravity	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
Gasoline, U. S. Motor-blends and special cuts	7.50 –10.00	7.50 –10.00	7.50 –10.00
Gas Oil, 30-34, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Diesel Oil, 27 plus, per barrel	$0.875–$1.00	$0.875–$1.00	$0.875–$1.00
Bunker oil, 14-18, per barrel	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.25	5.50 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125, 150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	May 27	
	Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	28-29	29/6
Gulf to U. K. or Continental ports*	18	19–19/6
North Atlantic to U. K. or Continental ports*	15/6	16/6–17
Calif. to North Atlantic ports (not E. of N. Y.)	63–65	$1.00
Gulf to North Atlantic ports (not E. of N. Y.)**	21	37

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

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— *with quality petroleum products*

To the Jobber interested in increasing his business on the firm foundation of quality, the Imperial trade mark stands for more than just the symbol of nationally advertised products.

Imperial is always desirous of giving just a little more than is expected . . . of making the Jobbers customers feel just a little more satisfied. To this end the Imperial franchise is particularly desirable because Imperial backs it with the experience and equipment necessary in the refining of quality petroleum products and an organization helping the Jobber by working with him and understanding his needs.

Imperial Refineries

Imperial Refining Co. **San Angelo Refining Co.**
Kettle Creek Refining Co. **Wickett Refining Co.**

General Offices
TULSA, OKLAHOMA

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect May 27, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	12	2	14	18	13
Newark, N. J.	14	2	16	20	13
Annapolis, Md.	14	4	18	22	13
Baltimore, Md.	14	4	18	22	12
Cumberland, Md.	14	4	18	22	13
Washington, D. C.	14	2	16	20	12
Danville, Va.	14	5	19	23	12
Norfolk, Va.	14	5	19	23	13
Richmond, Va.	14	5	19	23	13
Roanoke, Va.	14	5	19	23	13
Petersburg, Va.	14	5	19	23	13
Charleston, W. Va.	14	4	18	22	13
Keyser, W. Va.	14	4	18	22	13
Parkersburg, W. Va.	14	4	18	20	13
Wheeling, W. Va.	14	4	18	22	13
Charlotte, N. C.	14	5	19	23	13
Hickory, N. C.	14	5	19	23	13
Mt. Airy, N. C.	14	5	19	23	13
Salisbury, N. C.	13	5	18	20	13
Charleston, S. C.	14	6	20	24	13
Columbia, S. C.	14	6	20	24	13

CONTINENTAL OIL

Denver, Colo.	14	4	18	21	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	17	4	21	24	14
Cheyenne, Wyo.	18	4	22	25	15.5
Butte, Mont.	20.5	5	25.5	28.5	20
Helena, Mont.	20.5	5	25.5	28.5	20
Salt Lake City, Utah	18.5	3½	22	25	17
Boise, Ida.	20.5	4	24.5	27.5	19
Twin Falls, Ida.	20.5	4	24.5	27.5	19
Albuquerque, N. M.	15	5	20	23	17

S. O. CALIFORNIA

Phoenix, Ariz.	14	4	18	22	21.5
Los Angeles, Cal.	15.5	3	18.5	22.5	15.5
Fresno, Cal.	16	3	19	23	16.5
San Francisco, Cal.	16	3	19	23	15.5
Reno, Nev.	20	4	24	28	19
Portland, Ore.	16.5	3	19.5	23.5	16.5
Seattle, Wash.	16.5	2	18.5	22.5	16.5
Spokane, Wash.	20.5	2	22.5	26.5	20.5
Tacoma, Wash.	16.5	2	18.5	22.5	16.5

Note: 3c per gal. discount to dealers off t.w. price thru territory.

S. O. LOUISIANA

Little Rock, Ark.	15	5	20	24	13
Alexandria, La.	14	4	18	22	†16
Baton Rouge, La.	13	4	17	20	†14.5
Lake Charles, La.	††15.5	4	††19.5	††23.5	†16
New Orleans, La.	*12.5	4	*16.5	20.5	†16
Shreveport, La.	14.5	4	18.5	22.5	†15
Lafayette, La.	**15	4	**19	**23	†14
Bristol, Tenn.	17	5	22	25	14
Chattanooga, Tenn.	16.5	5	21.5	25.5	16
Knoxville, Tenn.	17	5	22	26	16
Nashville, Tenn.	14	5	19	23	16
Memphis, Tenn.	13	5	18	22	12.5

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	13	5	18	19	15.5
Catlettsburg, Ky.	13	5	18	19	15.5
Lexington, Ky.	16	5	21	23	15.5
Louisville, Ky.	16	5	21	23	15
Covington, Ky.	16	5	21	22	15.5
Clarkdale, Miss.	17	5	22	24	12.5
Gulfport, Miss.††	18.5	5	23.5	25.5	14
Jackson, Miss.	17	5	22	24	13
Natchez, Miss.	16.5	5	21.5	23.5	14
Vicksburg, Miss.	16.5	5	21.5	23.5	14
Birmingham, Ala.	18	4	22	24	16
Mobile, Ala.‡	18	4	22	24	15
Montgomery, Ala.*	19	4	23	25	16.5
Atlanta, Ga.	18	4	22	24	†16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	23	†15.5
Jacksonville, Fla.	17	5	22	24	14.5
Miami, Fla.	18	5	23	25	15.5
Tampa, Fla.	17	5	22	24	14.5
Pensacola, Fla.**	18	5	23	25	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

Latest Changes In Tank Wagon Prices

Gasoline Changes

S. O. Ohio—T.w. prices gasoline up 1c, s.s. 2c, through Tuscarawas County, to state-wide prices of 19c and 20c respectively, including 4c state tax, **May 25.**

S. O. Kentucky—T.w. and s.s. prices gasoline up 1c generally, through territory, **May 27,** with these exceptions: all Florida unchanged; Ashland and Catlettsburg, Ky. unchanged; Clarksdale, up 3c; and Jackson, Miss. up 5c.

All points where prices were below normal, were brought up to normal in this advance.

S. O. Indiana—T.w. and s.s. prices gasoline up 1c, through territory, **May 23.** This follows 1c advance on May 18 reported in last week's issue.

S. O. Nebraska—T.w. and s.s. prices advanced 1c, through Nebraska, **May 18,** and 1c, **May 23.** Notice of the May 18 advance came too late to include in May 22 issue of NATIONAL PETROLEUM NEWS.

S. O. Louisiana—T.w. and s.s. prices gasoline up 1c, through territory, except Shreveport up 1.5 cents, **May 22.**

T.w. and s.s. prices up another 1c, through territory, **May 25.**

Magnolia Petroleum—T.w. and s.s. prices up 2c, through Oklahoma, except Tulsa unchanged, **May 27.** T.w. and s.s. prices, Little Rock, up 3c, **May 27,** and at Texarkana, up 1c, same date.

Continental Oil—T.w. and s.s. prices gasoline up 1c, through Colorado, Wyoming, Utah, Montana and Idaho, **May 24.** New Mexico was unchanged.

Canada—T.w. and s.s. prices gasoline up 1c, through Canada, except Montreal up 2c, **May 22.**

S. O. New Jersey—S.s. price only of gasoline cut 2c, Parkersburg, to 20c, **May 7.**

T.w. and s.s. prices gasoline cut 1c, Salisbury, to 18c and 20c respectively, **May 9**

Kerosene Changes

S. O. New York—Kerosene cut 2c, Burlington, to 13c t.w., **May 10.**

Magnolia Petroleum—Kerosene cut 1c, Fort Worth, to 12c t.w., **May 23.**

S. O. New Jersey—Kerosene cut 1c, Danville, to 12c t.w., **May 18.**

V. M. & P. Naphthas Higher

CHICAGO—On May 23 Standard Oil Co. of Indiana advanced tank wagon price of all grades of naphthas 1 cent through its territory.

S. O. NEBRASKA

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Omaha, Neb.	16.25	4	20.25	22.25	13.25
McCook	17.75	4	21.75	23.75	14.75
Norfolk	16.75	4	20.75	22.75	13.75
North Platte	17.75	4	21.75	23.75	14.50
Scottsbluff	17.75	4	21.75	23.75	14.25

S. O. INDIANA

Chicago, Ill.	16.0	0	16.0	17.0	13
Decatur, Ill.	16.2	0	16.2	17.2	13.1
E. St. Louis, Ill.	15.4	0	15.4	16.4	12.2
Joliet, Ill.	16.4	0	16.4	17.4	13.3
Peoria, Ill.	16.2	0	16.2	17.2	13.1
Quincy, Ill.	16.2	0	16.2	17.2	12.9
Indianapolis, Ind.	16.2	4	20.2	21.2	14.2
Evansville, Ind.	16	4	20	21	14
South Bend, Ind.	16.4	4	20.4	21.4	14.4
Detroit, Mich.	16.8	3	19.8	20.8	14.7
Grand Rapids, Mich.	16.7	3	19.7	20.7	14.6
Saginaw, Mich.	16.9	3	19.9	20.9	14.8
Green Bay, Wisc.	16.6	2	18.6	19.6	13.4
Madison, Wisc.	16.3	2	18.3	19.3	13.1
Milwaukee, Wisc.	16.1	2	18.1	19.1	12.9
La Crosse, Wisc.	17.2	2	19.2	20.2	14
Minneapolis, Minn.	17.2	3	20.2	21.2	13.9
Duluth, Minn.	17.5	3	20.5	21.5	13.9
Mankato, Minn.	17.1	3	20.1	21.1	13.7
Des Moines, Ia.	16.5	3	19.5	20.5	13.3
Davenport, Ia.	16.5	3	19.5	20.5	13.3
Sioux City, Ia.	16.1	3	19.1	20.1	12.9
Mason City, Ia.	16.5	3	19.5	20.5	13.3
St. Louis, Mo.	*15.9	2	17.9	18.9	12.3
Kansas City, Mo.	†16.9	2	18.9	19.9	11.6
St. Joseph, Mo.	†16.5	2	18.5	19.5	12.2
Fargo, N. D.	18.9	2	20.9	21.9	15.9
Grand Forks, N. D.	19.2	2	21.2	22.2	16.2
Minot, N. D.	18.9	2	20.9	21.9	15.9

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W
Pierre, S. D.	17	4	21	22	14.4
Huron, S. D.	17.3	4	21.3	22.3	14.7
Wichita, Kans.	14.8	3	17.8	18.8	11.8
Bartlesville, Okla.	14.5	3	17.5	18.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Bryan, Ohio.	*13	4	*17	17	14
††13 Competitive Points.	††14	4	††18	18	14
†At Other Competitive Points.	*14	4	*18	19	14
Elsewhere in Ohio.	*15	4	*19	20	14

†These points are: all of Franklin county, including Columbus, Westerville, Worthington and Rome, etc.; and these additional points: Marion, Hicksville, Celina, Piqua, Arlington and Mortimer.

*Dealers and commercial accounts get 2c per gal off t. w. price.

††These 13 points are: Hamilton, Findlay, Washington C. H., Lima, Arcadia, Perrysburg, Fostoria, Wapakoneta, Urbana, Jamestown, Mansfield, Xenia and St. Paris. Discount to dealers is 3c per gal. off t.w. price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

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with

MARS "C" Unit

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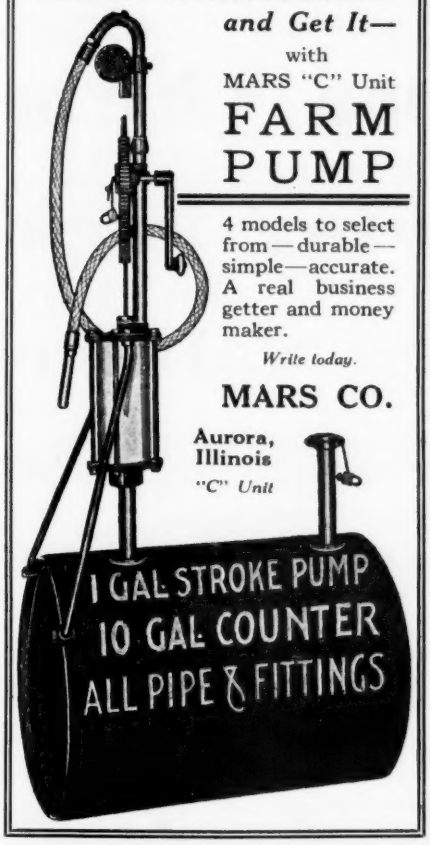

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The Oakite Service Man near you can tell you how you can put your cleaning on this economical, work saving basis. Write us to have him call—no obligation.

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OAKITE

Industrial Cleaning Materials and Methods

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect May 27, 1929

MAGNOLIA PETROLEUM

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil* T.W.
Muskogee, Okla.	12	3	15	19	13
Oklahoma City	12	3	15	19	10
Tulsa, Okla.	10	3	13	17	10
Fort Smith, Ark.†	12	†3	15	19	12
Little Rock, Ark.	15	5	20	24	13
Texarkana, Ark.*	13	*2	15	19	13
Dallas, Tex.	11	2	13	17	13
Fort Worth, Tex.	11	2	13	16	12
Houston, Tex.	12	2	14	18	13
San Antonio, Tex.	11	2	13	17	11
El Paso, Tex.	15	2	17	20	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 3c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	2	19	*21	15
Albany, N. Y.	15	2	17	18	15
Buffalo, N. Y.	15	2	17	18	14
Rochester, N. Y.	15	2	17	18	13
Syracuse, N. Y.	15	2	17	18	12
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	22	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	13

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	†16	*	†16	21	14
Philadelphia, Pa.	†16	*	†16	21	14
Allentown, Pa.	†16	*	†16	21	14
Erie, Pa.	†13	*	†13	18	14
Scranton, Pa.	†16	*	†16	21	14
Altoona, Pa.	†16	*	†16	21	14
Dover, Del.	†16	3	†19	21	14
Wilmington, Del.	†16	3	†19	21	14
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	14	2	16	17	15
Providence, R. I.	13	2	15	16	15
Hartford, Conn.	16	2	18	20	14
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	16	2	18	20	13
Camden, N. J.	16	2	18	20	13
Trenton, N. J.	16	2	18	20	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	16	4	20	22	13
Hagerstown, Md.	16	4	20	22	13
Richmond, Va.	16	5	21	23	13
Wilmington, N. C.	16	4	20	22	13
Brunswick, Ga.	17	4	21	23	**16.5
Jacksonville, Fla.	17	5	22	24	14.5

*3-cent state tax is collected by retail dealer and paid by him directly to state.

†The Atlantic Refg Co. recognizes a 2c a gal. discount from its posted tank wagon market on sales to dealers for purposes of resale.

The company also recognizes a maximum discount of 2c per gallon to commercial accounts under contract for one year.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	15.7	17.2	19
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	*19.7	*21.2	*23
St. Louis	15.6	17.1	18.9
New York		17	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.

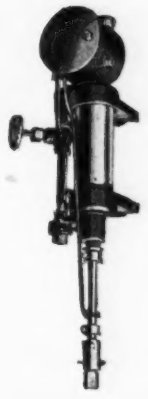
Petroleum Spirits

Tank Cars (Solvent)	
New York refineries	12.00
Philadelphia refineries	12.00
Tank Wagon or Steel Barrels	
New York City	17
New England	19
New Jersey	16
Pennsylvania	16–18

(*Continued on Page 124*)

Announcing

the New Hayes Air Motor



The latest achievement of Hayes Engineers—an Air Motor that pumps the gasoline into the cylinder. Converts any hand operated Hayes into an Air Motor Pump. Fits all models. Easily installed in a few minutes. Saves expensive underground Air Tank. Tested in actual use for twelve months in the coldest part of the country.

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WHY do they come back? And keep coming back? The answer is obviously they have found a gasoline of higher quality than they can get anywhere else. Skelly refining explains the quality, and the many thousands of users gave Skelly Refractionated Gasoline its reputation for building volume. Write, wire or phone

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SKELLY *Refractionated* **GASOLINE**

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Crude Oil Prices (in Effect May 27, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$4.10
Bradford District Oil in National Transit Lines (Bradford District)	4.10
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.85
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.65
Corning Grade in Buckeye Pipe Lines (Ohio)	1.90
Corning, O., heavy grade	1.80
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.80
Ragland Grade in Cumberland Pipe Lines (Kentucky)	$0.60

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.65

MICHIGAN

(Posted by Dixie Oil Co.)

Dundee (Muskegon)	$1.00

(Posted by Pure Oil Co.)

Midland, Midland County	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective May 21, 1929

Wooster	$1.90	Princeton	$1.75
Lima	1.80	Illinois	1.75
Waterloo	1.20	Plymouth	1.28
Indiana	1.57	West Kentucky	1.83

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$1.90
Oil Springs	1.97

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective May 20, 1929

Below 25	$0.85	35-35.9	$1.40
25-25.9	0.90	36-36.9	1.45
26-26.9	0.95	37-37.9	1.50
27-27.9	1.00	38-38.9	1.55
28-28.9	1.05	39-39.9	1.60
29-29.9	1.10	40-40.9	1.65
30-30.9	1.15	41-41.9	1.70
31-31.9	1.20	42-42.9	1.75
32-32.9	1.25	43-43.9	1.80
33-33.9	1.30	44 and above	1.85
34-34.9	1.35		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

May 20, 1929, same schedule as Prairie in above fields.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

May 20, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.70	29-29.9	$0.95
26-26.9	0.75	30-30.9	1.05
27-27.9	0.85	31-31.9	1.15
28-28.9	0.90		

May 20, 1929, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in West Texas which see:

Iatan district	$0.93
Corsicana heavy	0.80
Luling	0.90
Mirando	0.90

Carter Oil Co.

(Oklahoma and Kansas)

May 20, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Hutchinson and Carson Counties:

Below 32	$0.90	38-38.9	$1.25
32-32.9	0.95	39-39.9	1.30
33-33.9	1.00	40-40.9	1.35
34-34.9	1.05	41-41.9	1.40
35-35.9	1.10	42-42.9	1.45
36-36.9	1.15	43-43.9	1.50
37-37.9	1.20	44 and above	1.55

Wheeler County:

Below 30	$0.90	37-37.9	$1.30
30-30.9	0.95	38-38.9	1.35
31-31.9	1.00	39-39.9	1.40
32-32.9	1.05	40-40.9	1.45
33-33.9	1.10	41-41.9	1.50
34-34.9	1.15	42-42.9	1.55
35-35.9	1.20	43-43.9	1.60
36-36.9	1.25	44 and above	1.65

Gray County:

Below 29	$0.90	37-37.9	$1.35
29-29.9	0.95	38-38.9	1.40
30-30.9	1.00	39-39.9	1.45
31-31.9	1.05	40-40.9	1.50
32-32.9	1.10	41-41.9	1.55
33-33.9	1.15	42-42.9	1.60
34-34.9	1.20	43-43.9	1.65
35-35.9	1.25	44 and above	1.70
36-36.9	1.30		

Above prices met by The Texas Co. and Magnolia on May 20.

WEST TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Winkler, Crane, Upton, Crockett, Howard and Pecos Counties, also Lea County, N. Mex.:

Below 25	$0.70	28-28.9	$0.86
25-25.9	0.74	29-29.9	0.90
26-26.9	0.78	30-30.9	0.94
27-27.9	0.82	31-31.9	0.98
32-32.9	$1.02	35-35.9	$1.14
33-33.9	1.06	36 and above	1.18
34-34.9	1.10		

May 20, 1929, The Texas Co. posted same prices as Humble in Crane, Upton, Pecos and Winkler., and Magnolia in Crane, Upton, Winkler, Glasscock, Howard and Mitchell.

SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective May 20, 1929

Mirando	$0.90
Salt Flat	1.25

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective May 22, 1929

Below 28	$1.00	36-36.9	$1.45
28-28.9	1.05	37-37.9	1.50
29-29.9	1.10	38-38.9	1.55
30-30.9	1.15	39-39.9	1.60
31-31.9	1.20	40-40.9	1.65
32-32.9	1.25	41-41.9	1.70
33-33.9	1.30	42-42.9	1.75
34-34.9	1.35	43-43.9	1.80
35-35.9	1.40	44 and above	1.85

**Cotton Valley, below 36, $0.85. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.85
do 24 and above	1.00
Bellevue	1.20
*Urania, La.	1.10
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

May 20, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.85; 25-25.9, $0.90; 26-26.9, $0.95; 27-27.9, $1.00.

May 22, Magnolia, Atlantic, Shreveport-Eldorado Pipe Line, Louisiana Oil, and Gulf Companies met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective May 22, 1929

Below 28	$0.90	30-30.9	$1.02
28-28.9	0.94	31-31.9	1.06
29-29.9	0.98	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective May 20, 1929

Grades A	$1.30	29-29.9	$1.30
Grades B:		30-30.9	1.33
Below 25	$1.15	31-31.9	1.36
25-25.9	1.18	32-32.9	1.39
26-26.9	1.21	33-33.9	1.42
27-27.9	1.24	34-34.9	1.45
28-28.9	1.27	35 and above	1.48

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Crude Price Changes

Most major purchasers of Mid-Continent and Texas crudes announced their price changes too late last week to enable NATIONAL PETROLEUM NEWS to report them in its issue of May 22, notably the Humble Oil & Refining Co., which came along with its announcement of an advance and initial grading of West Texas crudes late in the afternoon of May 22, but making its prices retroactive to May 20; likewise The Texas Co. and Magnolia Petroleum Co.

These changes have been made since those reported on pages 27 and 127 of the May 22 issue of NATIONAL PETROLEUM NEWS:

HOUSTON—On May 20 Humble Oil & Refining Co. met in full the Prairie advance on Mid-Continent crude in the fields where it buys on a gravity basis, which include Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona.

On the same date it advanced Texas Panhandle, West Texas, southwest Texas, Gulf Coast, and New Mexico crudes in varying amounts.

The advance in Texas Panhandle was from 17 to 41 cents; in West Texas and New Mexico, from 5 to 53 cents; southwest Texas, from 10 to 25 cents; and in Gulf Coastal fields, from 10 to 21 cents.

Humble's gravity schedule in the Panhandle is unchanged, but the differential has been made 5 cents for each grade, replacing the 3 to 6 cent differential which formerly applied.

Hutchinson-Carson county crude, minimum grade of below 32 gravity is now 90 cents, with 5 cents additional for each succeeding degree of gravity, up to maximum grade of 44 and above which is $1.55.

Wheeler county crude minimum grade of below 30 gravity is 90 cents, with 5 cents additional for each succeeding gravity up to maximum grade of 44 and above which is $1.65.

Gray county crude minimum grade of below 29 gravity is 90 cents, with 5 cents additional for each succeeding grade up to maximum grade of 44 and above which is $1.70.

For the first time West Texas crudes were placed on a gravity schedule on May 20. Formerly a flat price of 65 cents applied in these fields. A 4 cent price differential was posted for each succeeding degree of gravity.

Fields included in the West Texas change are Crane, Upton, Crockett,

(Continued on Page 122)

ACCURACY

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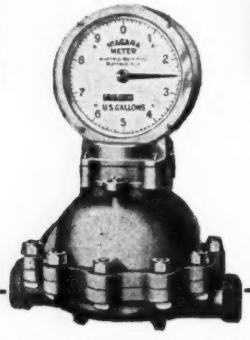

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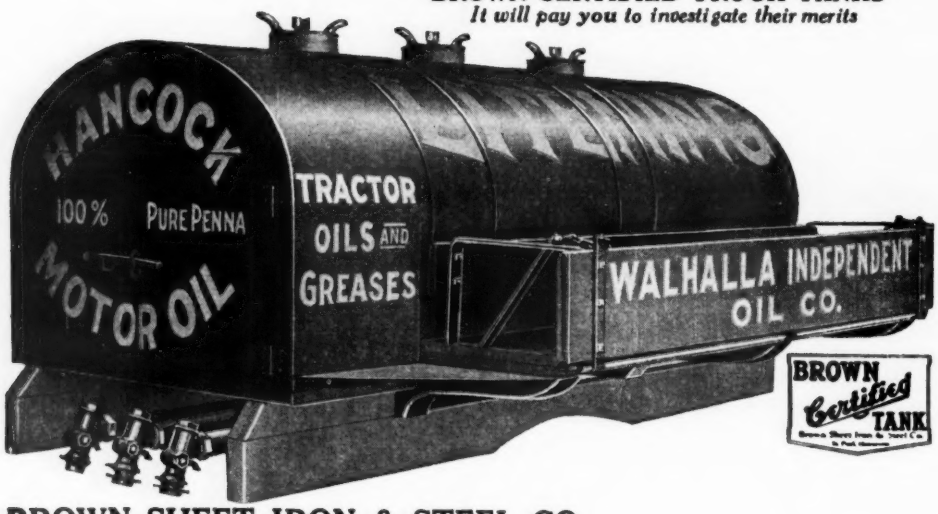

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Crude Oil Prices (in Effect May 27, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective May 20, 1929

Grades A	$1.30	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.49	40-40.9	$1.69
36-36.9	1.53	41-41.9	1.73
37-37.9	1.57	42-42.9	1.77
38-38.9	1.61	43-43.9	1.81
39-39.9	1.65	44 and above	1.85

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective May 20, 1929)

‡Salt Creek 29-29.9	$1.10
" " 30-30.9	1.15
" " 31-31.9	1.20
" " 32-32.9	1.25
" " 33-33.9	1.30
" " 34-34.9	1.35
" " 35-35.9	1.40
" " 36-36.9	1.45
" " 37 and above	1.50
Elk Basin	1.65
Grass Creek light	1.65
Big Muddy	$1.43
Lance Creek	1.68
Rock Creek	1.40
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.65
‡Cat Creek, Mont.	1.65
Sunburst, Mont.	1.75
‡Hogback, N. Mex.	1.70
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick †Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14-14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15-15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16-16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17-17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18-18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19-19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20-20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21-21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22-22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23-23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25-25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26-26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27-27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29-29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30-30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31-31.9	1.30	....	....	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33-33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	.140	1.22	....	....	....	....	1.34
34-34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35-35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	....	1.30	....	....	....	....	....
36-36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	May 27	May 20
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.50-4.50	$3.50-4.50
Liquid Chlorine, tank cars, wks, lb.	3.50-5.00	3.50-5.00

Compounders' Supplies

	May 27	May 20
Vegetable Oils		
Linseed carloads, spot, lb.	10.30	10.40
Tanks, spot	9.50	9.60
Soya Bean, Tanks, coast, lb.	9.625	9.625
Oleic Acid		
Distilled, tanks, lb.	9.75	9.75
Distilled, bbls, lb.	10.50	10.625
Saponified, tanks, lb.	9.75	10.75
Saponified, bbls, lb.	10.50	11.625
Lard Oils		
Prime Winter Strained, lb.	15.00	15.25
Extra Winter Strained, lb.	13.25	13.25
Extra, lb.	12.875	12.875
Extra No. 1, lb.	12.25	12.50
No. 1, lb.	12.00	12.25
No. 2, lb.	11.75	12.00
Tallow oil, lb.	11.25	11.25
Neatsfoot Oil		
Pure, bbls, lb.	14.75	14.75
Extra, bbls, lb.	12.50	12.75
No. 1 bbls, lb.	12.25	12.50
Cold Pressed, lb.	18.50	18.75
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	71	71
Light Pressed, tank cars, N.Y. gal.	65	65
White bleached, gal.	77	77
Yellow bleached, gal.	73	73
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y., gal.	51	51
Steam distilled turpentine, Savannah, gal.	48	48
Gum turpentine, N. Y., gal.	53.75-54.00	53.50
Gum turpentine, f.o.b. cars Savannah, gal.	48.75	50
Wood Rosin F. N. Y., bbl.	$7.30	$7.30
Wood Rosin F, Savn'h, bbl.	$7.15	$6.60
Gum Rosin B, N. Y., bbl.	$7.45	$7.45
Gum Rosin B, f.o.b. cars Savannah, bbl.	$6.55	$6.55
Rosin oil, pure, gal.	61	61
Rosin oil, compounded, gal.	50	50
Pine Tar		
Kiln burnt, bbl.	$13.00-14.00	$13.00-14.00
Retort, bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	56-63	56-63

Air Lanes

(*Continued from Page* 95)

gage for each. The cabin of the plane is equipped with adjustable chairs and two comfortable davenports which may be converted into berths if desired. There are two upper berths which may be used if needed. The cabin is 4.5 x 16 feet and back of it is a lavatory and toilet. Space for baggage is provided in the wings.

"The plane is electrically lighted and heated. It has flares and other necessary equipment for night landing. In the control cabin are seats for two pilots and on the instrument board are both magnetic and earth indicator compasses; turn, bank and drift indicators, altimeter, speed indicator and other instruments for navigating the ship night and day.

"Standard Oil Co.'s hangar at the municipal airport of Chicago probably will be where Stanolind II will stay when not in service. It has been chosen as flagship for the 'Good will tour' of the St. Paul Association of Commerce and will carry the famous 'flying city council' from St. Paul to Winnipeg soon. On June 3 it is to be in Wichita to serve as flagship on the second Kansas air tour, a two-weeks' flight over the state."

Crude Price Changes

(*Continued from Page* 119)

Winkler, Howard and Pecos counties; also Lea county, N. M. Crudes below 25 gravity are posted at 70 cents, with 4 cents additional for each succeeding degree of gravity, up to maximum grade of 36 and above, which is $1.18.

Southwest Texas crude, including Salt Flat, was advanced 25 cents, also on May 20, to $1.25 per barrel. Mirando was advanced 10 cents, making new price 90 cents per barrel, same date.

All Gulf Coast "A" grade crude was advanced 10 cents, making new price $1.30. The advance on "B" grades was from 10 to 21 cents. "B" grades below 25 gravity are $1.15, with 3 cents additional for each succeeding degree of gravity, up to maximum grade of 35 and above which is $1.48.

* * *

DALLAS—The above increases were met on May 20 by the Magnolia Petroleum Co. in the Texas Panhandle fields; in Crane, Upton, Winkler, Glasscock, Howard and Mitchell counties in West Texas; and in Mirando. Magnolia also advanced Luling, southwest Texas crude, 10 cents, making new price 90 cents.

* * *

NEW YORK—The Texas Co. on May 20 met the Prairie advance in Oklahoma, North Texas, north central, and central Texas, and in North Louisiana. One grade differs from the Prairie schedule and that is its minimum grade which is 24-24.9 at 85 cents. Rest of the schedule is same as Prairie's.

The same date The Texas Co. met Humble's advances in the Texas Panhandle, in West Texas and in Lea county, N. M. It also met generally Humble's advances in Gulf Coast fields, but its gravity schedule has for a long time differed from Humble's.

The Texas Co. posted a 10 cent increase on Gulf Coast Grades "A," all of which are $1.30. Its Grades "B" heavy crudes are unchanged at $1.15, but Grades "B" light crudes were advanced from 10 to 38 cents. The minimum grade of Grades "B" light crude is below 25, which is now $1.15. A 3 cent price differential applies up to 34-34.9 gravity, which is $1.45, and from that grade on a 4 cent differential applies, up to maximum grade of 44 and above, which is $1.85. The Texas Co.'s gravity schedule formerly had 40 and above as its maximum grade, at $1.47. Four new light oil grades were added on May 20.

It also posted Markham, Tex. crude at $1.00 per barrel.

* * *

NEW ORLEANS—On May 22 Standard Oil Co. of Louisiana advanced North Louisiana and Arkansas crudes from 17 to 41 cents, including Caddo, Homer, Haynesville, Bull Bayou, Critchton, De Soto, and Eldorado. Minimum grade of below 28 gravity in these fields is $1.05, with 5 cents additional for each succeeding degree of gravity, up to maximum grade of 44 and above, which is $1.85. All grades from 28 upward conform to Prairie's price schedule.

Cotton Valley was advanced from 10 to 41 cents, minimum grade of below 36 being 85 cents, and rest of schedule same as Caddo, Homer, etc.

Smackover, Ark. was advanced 10 cents, making below 24 gravity 85 cents, and 24 and above, $1.00.

Bellevue crude is unchanged at $1.20.

Immediately all major purchasers met the advances in Louisiana and Arkansas fields where they purchase. These purchasers include: Magnolia Petroleum Co., which met it in Pine Island, Haynesville, Bull Bayou, Eldorado, Cotton Valley, Smackover and Rainbow, Ark. pool; Atlantic Oil Producing Co., in Homer, Haynesville, West Eldorado and Smackover; Shreveport-Eldorado Pipe Line Co., in Eldorado, Homer and Smackover; and Gulf Refining Co., in Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto, Eldorado and Smackover.

The Texas Co. posted its changes in North Louisiana on May 20, but the advance in Smackover on May 22.

On May 22 also Louisiana Oil Refining Corp. met the Standard's increase in Caddo, Homer, Haynesville, Eldorado, Cotton Valley and Smackover.

On the same date the Louisiana company advanced Urania, La. crude 10 cents, making new price $1.10 per barrel.

* * *

SHREVEPORT—On May 22 Atlantic Oil Producing Co., followed by the Louisiana Oil Refining Corp., advanced all grades of Stephens, Ark. crude 20 cents per barrel. Minimum grade of below 28 gravity is 90 cents, with 4 cents additional for each succeeding degree of gravity, up to maximum grade of 32 and above which is $1.10.

* * *

CASPER—On May 21 Midwest Refining Co. met the Ohio Oil Co.'s advances in Wyoming, Montana and New Mexico by advancing Grass Creek light and Elk Basin 29 cents; Osage, Wyo. 27 cents; Greybull, Torchlight and Cat Creek, Mont., and Hogback, N. M. 17 cents per barrel. For new prices see crude price table at the back of this issue.

* * *

FINDLAY—On May 23 Ohio Oil Co. advanced Sunburst, Mont. crude 10 cents, making new price $1.75 per barrel.

* * *

OIL CITY—On May 22 Joseph Seep Purchasing Agency advanced Cabell, Corning and Somerset crudes 15 cents. Pennsylvania grades were unchanged. New prices are: Cabell, $1.65; Corning, $1.90; Corning heavy, $1.80; and Somerset, $1.80.

* * *

CASPER—On May 21 Producers & Refiners Corp. advanced Lost Soldier, Wyo. crude 10 cents, making new price $1.05 per barrel at the well.

R. T. Herndon Made Vice President

LOS ANGELES, May 23.—R. T. Herndon has been elected vice president of The Texas Co. of California, taking the vacancy left by the resignation of C. L. Coppage.

The new Pacific Coast executive, whose title will be vice president and manager of domestic sales, has been with The Texas Co. since November, 1915, starting as a commission agent at Mercedes, Texas. Mr. Herndon took over his duties immediately after his election, and will have his headquarters in the company building at Los Angeles.

Bringing the Sales Convention to your Service Men

These periodic bulletins tell the station attendant how to sell more oil, grease and gasoline! Do you want your men to get these helps?

SALES Conventions are highly valuable in the exploitation of petroleum business. It may not be possible for you to hold weekly or monthly sales conventions with your station men in person, but it *is* possible to *bring the benefits of Sales Conventions to your Men* without interrupting business at the station.

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EMPIRE OIL WORKS, INC., Oil City, Pa.

Refineries: Reno, Pa. - Tidioute, Pa.

PENN-EMPIRE

MOTOR OILS and GREASES

Speed with Safety

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 25 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	22½	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 29	22,300	28½	28¾	†22½	25	— 3⅛
85	51¼	64¾	44	(sh) 209,180	N.P.	American Republics Corp.	....	.....	4,900	49½	51	47	49	— 1
5 ⅜	37½	47¼	43	$56,000,000	$25	Associated Oil	50cQ	Mar. 31, 29	270	45	45	43	43	— 2
62½	50	71½	53½	50,000,000	25	Atlantic Refining	‡25cQ	Mar. 15, 29	129,000	68⅞	68⅞	64½	65¾	— 2¼
118¼	114½	117⅝	114	20,000,000	100	do pfd.	$1.75Q	May 1, 29	.....	.....	.....	.....	.....	.....
53	20	49⅛	38⅛	47,261,125	25	Barnsdall Corp. A	50cQ	May 6, 29	75,900	44⅞	45⅞	42¼	42⅞	— 3
51⅛	20	49	38⅛	300,525	25	do B	50cQ	May 6, 29	.....	.....	.....	.....	.....	.....
24½	12¼	28½	20	(sh) 956,075	N.P.	Beacon Oil	....	.....	14,500	24⅝	25⅞	23½	24	— ¾
36	25¼	30	26¾	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	40	27	27	27	27	0
94⅞	68	84½	63	21,031,400	100	General Asphalt	....	.....	65,800	83⅞	84½	79¼	80¼	— 2½
141	110⅛	128¾	104½	6,628,200	100	do pfd.	$1.25Q	June 1, 29	3,300	126	128	123	125½	— ½
167	79	107	80⅛	25,000,000	100	Houston Oil	....	.....	13,800	92	92¼	81	82½	—11½
38⅜	21¾	39¼	30	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Apr. 30, 29	40,500	38	38¼	36½	37	— 1
39⅝	9	52⅝	29	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	58,400	45½	45½	40¼	43⅛	— 2⅛
37¼	8½	48¾	28	4,550,110	10	do ctfs.	....	.....	21,200	42	42	39	40½	— 1⅝
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Apr. 1, 29	.....	.....	.....	.....	.....	.....
39⅛	27⅜	33⅛	26¼	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	500	28½	29⅜	28¼	28¼	— 1¼
19¾	9⅜	18	12¾	(sh) 1,187,298	N.P.	Louisiana Oil Refining	....	.....	16,500	14	14⅛	13½	13⅝	— ⅝
96	78	100	89	$4,000,000	$100	do pfd.	$1.62½	May 15, 29	70	91	91	91	91	0
25½	12½	18½	12	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	2,500	15¾	15¾	14⅛	15¾	— ½
49¾	33	47⅛	35⅞	(sh) 2,316,897	N.P.	Marland Oil Co.	....	Mar. 31, 27	39,800	38	38½	36	36⅛	— 1⅞
360	250	295	205	$45,942,800	$100	Mexican Petroleum	‡$3Q	Apr. 20, 29	.....	....	....	....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd.	$2Q	Apr. 20, 29	.....	....	....	....	.....	.....
73	4⅝	69⅜	41½	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15. 24	38,800	50¾	51¼	46⅛	48	— 3
44½	25⅛	39⅞	30½	(sh) 1,857,461	N.P.	Mid-Continent	50cQ	May 15, 29	26,400	36	36⅜	34⅞	35	— ⅞
120½	103¼	121	120¼	$6,718,000	$100	do pfd.	$1.75Q	June 1, 29	.....	....	....	....	.....	.....
7⅜	2⅜	5⅛	3¾	23,849,720	10	Middle States	....	July 1, 23	31,800	4¼	4⅜	4	4¼	0
5⅛	1½	3½	2½	5,950,500	10	do ctfs.	....	.....	3,200	2¾	2⅞	†2½	2⅝	— ⅛
2¼	1	1½	1	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	5,800	1⅛	1⅛	1	1	0
55½	38¼	63	41⅜	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	7,900	59¾	60	58⅞	60	+ ½
58⅛	37⅝	66¾	40½	121,101,400	50	do B.	....	Oct. 20, 27	334,300	62¾	64½	60⅛	61⅜	— 1¼
28⅜	15⅛	17½	14	(sh) 400,000	N.P.	Pan American Western B.	....	Jan. 30, 27	400	14½	14½	14½	14½	0
21⅜	11½	15¼	9½	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	3,200	12	12	10½	10½	— 1¾
106¼	70	76	47½	$2,935,200	$100	do pfd.	....	July 2, 23	.....	.....	.....	.....	.....	.....
53⅞	35¼	47	37¼	(sh) 2,406,803	N.P.	Phillips Petroleum	37½cQ	Apr. 1, 29	24,800	40¼	41½	39⅝	40¼	— ¾
5¼	½	3⅜	2¼	$29,622,925	$25	Pierce Oil	....	.....	12,100	2½	2⅝	2⅜	2⅜	— ⅛
50	16¼	51½	30	15,000,000	100	do pfd.	....	Feb. 1, 22	1,300	41	41	40	40	— 1½
6⅝	3½	5⅞	4½	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	9,400	4⅞	4⅞	†4½	4⅝	— ⅛
64⅝	59½	65⅝	56⅛	$60,636,450	$25	Prairie Oil & Gas	.....	Aug. 31, 27	29,600	57¼	58¼	†56⅛	57	— ¼
.....	.....	61⅞	53⅜	101,250,000	25	Prairie Pipe Line	‡75cQ	Mar. 31, 29	21,100	60½	*61⅞	60	60¾	+ ¾
29¼	16	25⅞	18¼	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	2,900	21	21	18⅞	19½	— 1
49⅜	41	45¾	38¼	2,845,350	50	do pfd.	....	May 1, 25	390	41½	42	40	41¾	— 1¾
31¼	19	30¾	23½	75,959,250	25	Pure Oil Co.	37½cQ	June 1, 29	82,100	29½	30	27⅞	28¼	— 1¼
119	108	115½	112	13,000,000	100	do 8% pfd.	$2Q	Apr. 1, 29	180	113⅛	114	112⅜	112½	— 1½
56	23½	49⅝	40	47,127,725	25	Richfield Oil	50cQ	May 15, 29	30,100	46⅜	46⅝	44	44⅜	— 1⅝
.....	.....	42½	33¾	(sh) 1,200,000	N.P.	Rio Grande Oil Co.	‡$1S.A.	Jan. 25, 29	28,700	35¾	35⅞	32⅝	33	— 2¾
64	44⅝	55¾	31¾	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.336	Feb. 8, 29	2,900	52⅞	52⅞	51½	52	— ½
57½	39⅜	55¾	43	(sh) 65,203,000	£2	Shell Transport & T.	96.4c	Feb. 8, 29	.....	.....	.....	.....	.....	.....
39⅜	23¼	31¾	26	12,254,979	N.P.	Shell Union Oil	35cQ	Mar. 31, 29	27,900	29⅜	29⅝	28½	28½	— 1¼
27¼	18⅛	34¼	18¼	$8,357,280	$10	Simms Petroleum	40cQ	Mar. 15, 29	63,100	30	30⅞	28½	30	+ ½
46¾	17⅜	45	36	5,494,095	N.P.	Sinclair Consolidated	‡50cQ	Apr. 15, 29	613,100	38⅛	40⅞	37¾	40	+ 2
110	102½	111	107¾	$16,025,200	$100	do pfd.	$2Q	May 15, 29	900	108½	108½	108¾	108⅜	— ⅛
42⅝	25	46½	32⅞	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 29	32,100	43⅜	43¾	40⅜	41	— 2⅜
80	53	81⅛	64	(sh) 13,016,435	N.P.	S. O. California	62½cQ	Mar. 15, 29	65,700	77⅞	78¼	75⅛	75⅛	— 2¾
59¾	37⅛	62⅝	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Mar. 15, 29	124,500	59⅝	59⅜	57½	57½	— 1¾
45½	28¾	45¾	38⅝	434,094,575	25	S. O. New York	40cQ	Mar. 15, 29	105,100	41½	42¼	39¾	40⅛	— 1⅜
77	31½	68½	57	(sh) 1,297,847	N.P.	Sun Oil	25cQ	Mar. 15, 29	1,500	63	63	62	62⅛	— ⅞
110	100	105½	100	$5,000,000	$100	do pfd.	$1.50Q	June 1, 29	110	102½	105	102½	104	+ 1
14¼	2½	12	7	(sh) 1,304,698	N.P.	Superior Oil Corp.	....	Dec. 20, 20	44,200	8½	8½	7⅝	8	— ½
74⅜	50	68¼	57¼	$211,082,925	$25	The Texas Corp.	75cQ	Apr. 1, 29	89,100	64⅜	65	62½	62⅞	— 2
26⅜	12⅛	23⅞	16¼	8,380,340	10	Texas Pacific Coal & Oil	2½%o	Mar. 20, 29	21,100	19⅞	19⅞	18⅛	18¼	— 1¼
41½	19⅝	38½	27⅛	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 29	7,400	37½	37¾	35⅝	36¼	— 1¾
100⅛	86¼	97½	89¾	$20,321,000	$100	do 5½% pfd.	$1.25Q	May 15, 29	1,200	94	94½	93¼	93¼	— ¾
25	14⅜	23⅜	17½	(sh) 4,877,976	N.P.	Tide Water Associated	....	Aug. 1, 27	65,200	21	21¼	19⅜	20⅝	— ⅜
91⅜	81¼	90	86	$72,989,200	$100	do pfd.	$1.50Q	Apr. 1, 29	500	86½	86	85⅞	86	— 2
14½	6¾	13	9	(sh) 3,842,029	N.P.	Transcontinental Oil	....	.....	307,400	13⅞	14⅛	12¼	12¾	+ ¾
58	42¾	54½	46	$40,858,375	$25	Union Oil of California	50cQ	May 10, 29	9,300	49½	50	47¾	49¼	— 1⅛
128⅛	110	150¼	121⅞	31,101,200	100	Union Tank Car Co.	$1.25Q	June 1, 29	400	138	138	133	133	— 6⅜
44⅛	26	42⅛	31⅜	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Apr. 2, 29	8,300	33½	33½	†31⅛	31⅜	— 2
38	20⅛	37⅛	30¼	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 29	6,200	35⅜	36⅛	34⅜	34⅞	— 1
22¼	17¼	29¾	19½	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	5,600	25⅝	25⅝	23	23⅝	— 2⅜

•New High †New Low XEx-dividends ‡Also extras s-Stock Total Sales 2,806,560

Pittsburgh Stock Exchange

Transactions Week Ended May 24, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas	1,160	8	7¼	7¾	— ⅛
do pfd	5,696	8¼	8	8	— ¼
Columbia Gas	100	78	75¼	78	..
Devonial Oil	375	10	8½	8½	—1½
Dixie Gas & Util.	350	19½	17½	17½	—2½
do pfd	125	80	77½	77½	—2½
Lone Star Gas	9,138	80½	74¼	80	+5
Plymouth Oil	440	24½	22	23	—2
Pgh. Oil & Gas	196	3½	3½	3½	+ ½
Salt Creek Cons.	80	3¼	3	3	— ½

Pittsburgh Curb Market

Transactions Week Ended May 24, 1929

	Sales	High	Low	Last	Change
Ark. Gas A	7,054	7¾	6½	7¾	..
Lone Star w.i.	5,562	35¼	31¼	33	..
Okla. Gas 6s	$22,000	95	95	95	..
Phoenix Oil	900	.40	.40	.40	..

Solar Refining Co.—New stock has been put on a $2.50 annual dividend basis. The old stock which was split on a four for one basis has paid $10 a year.

Tank Wagon Tables

(Continued from Page 117)

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	T.W. Tax	Gasoline T.W.	Gasoline S.S	Oil T.W.
ONTARIO				
Toronto	20.5	5	25.5 29	21
Ottawa	14.5	5	19.5 23	21
Cochrane	25.5	5	30.5	26
Ft. William	23.5	5	28.5 32	22.5
MANITOBA				
Winnipeg	22.5	3	25.5 29	21.5
SASKATCHEWAN				
Regina	27	3	30 34	26
ALBERTA				
Edmonton	28.5	3	31.5 35	27.5
Calgary	24.5	3	27.5 31	23.5
BRITISH COLUMBIA				
Vancouver	23	3	26 30	23
QUEBEC				
Montreal	21.5	5	26.5 30	22
Quebec City	21.5	5	26.5 30	23
Three Rivers	22.5	5	27.5 31	23
NEW BRUNSWICK				
St. John	25	5	30 34	25
Moncton	25	5	30 34	25
NOVA SCOTIA				
Halifax	25	5	30 34	25
Sydney	25	5	30 34	25
PRINCE EDWARD ISLAND				
Charlottetown	25	5	30 34	25

* Note: In districts surrounding these points 1c additional is added to city price.

Cleveland Stock Market

May 24	Par Value	Bid	Asked
Canfield Oil Co.	$100	...	140
do pfd.	100	103	...
Fred G. Clark	10	9½	10
National Refining	25	36	36½
do pfd.	100	...	137½
Paragon Refining	25	22¾	23½
do pfd.	N.P.	43½	44
do ctfs. of deposit	...	22¾	24½

xEx dividend

Oil Company Earnings

Year	1928	1927
Cosden & Co.	$769,991	.....
Mexican Pet. Corp.	8,293,338	$12,711,702
Mount. Prod. Corp.	*3,155,810	*3,391,986
First Quarter	**1929**	**1928**
Mid-Cont. Pet. Corp.	†$2,120,991	†$1,032,390

*Before depletion and federal income taxes.
†Before depletion, depreciation and federal income taxes.

Standard Oil Co. of Indiana—Charles J. Barkdull, treasurer, has been elected vice-president in charge of accounting and finances. He continues as treasurer.

Skilled Supervision
Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

STEEL
DRUM ACCESSORIES
CORPORATION

BUFFALO, NEW YORK

"The House of Drum Faucets"

THE buyer is never "out" to these super-salesmen. They run the tightest gauntlet of office boys, secretaries and buffers successfully.

When you start these salesmen on a call, they get there regardless of weather, baseball games and private offices. The U. S. mail service sees to it that your samples reach your prospect safely and surely.

Are you using these fine, clear, distortionless sample oil bottles enough in your business? Let us send you a sample 2-4 or 8 ounce size if you are not thoroughly familiar with their unusual quality.

OWENS-ILLINOIS
GLASS COMPANY

Toledo, Ohio
ESTABLISHED 1873

Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended May 25 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¾	£4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	800	15¾	16	15	15	— 1
21¼	15	18	14½	.....	....	do certificates	.....	.....	.....	.....	.....	.....	.....	.....
20½	14⅜	17	14	.....	£ 1	do cts. non-voting	.....	.....	100	14⅝	14⅝	14⅝	14⅝	+ 1/8
5	1¼	2⅜	1⅛	(sh) 500.000	N.P.	Atlantic Lobos	.....	.....	200	1½	1⅞	1½	1⅞	+ 1/8
9¾	3¼	4⅛	1½	$10,000,000	$50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
56	44½	46½	38	$1,000,000	25	Borne-Scrymser	‡$1S.A.	Apr. 15, 29	150	38¼	38¼	38¼	38¼	— 3½
76	58	74¼	67	10,000,000	50	Buckeye Pipe Line	‡$1Q	Mar. 15, 29	100	70⅞	70½	70½	70½	— ¼
161	117¼	170¼	140⅛	3,000,000	25	Chesebrough Mfg	‡$1Q	Mar. 31, 29	800	168	170	165	165	— 5⅛
23	16	29	17⅜	36,123,350	10	Continental Oil	.....	Dec. 15, 27	18,100	22⅛	22¼	21⅜	21⅛	— 1⅜
17½	9½	11⅜	8	.....	N.P.	Creole Petroleum	.....	.....	9,400	8½	8½	†8	8¼	— ¼
82	67	75¾	62	1,500,000	50	Cumberland Pipe Line	‡$1Q	Mar. 15, 29	.....	.....	.....	.....	.....	.....
88	64⅛	70½	59⅛	5,000,000	100	Eureka Pipe Line	$1Q	June 1, 29	1,400	62	65	62	65	+ 2½
13	4¼	6⅜	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	6½	6½	6½	6½	0
86	26	90	73½	4,000,000	100	do new pfd	.....	June 30, 26	70	73½	73½	†73½	73½	— 1¾
89¾	35	88	73½	2,000,000	100	do old pfd	.....	June 30, 26	80	75	75	†73½	73½	— 1½
114¾	59¼	124½	89⅜	73,685,700	25	Humble Oil & Refining	‡30cQ	Apr. 1, 29	19,800	116¼	117½	114⅜	115	— 2½
290½	176½	340½	285	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 15, 28	900	311	329	316	319	+ 8
104	56¾	119⅜	88	(sh) 6,605,442	N.P.	Imperial of Canada	12½cQ	June 1, 29	5,400	114¾	114¾	106	106⅛	— 7½
91⅞	74⅝	97	81¼	$5,000,000	$50	Indiana Pipe Line	‡$1Q	May 15, 29	1,800	96½	96½	96	96½	+ ½
55	35	65¼	46¼	(sh) 7,123,544	N.P.	International Petroleum	25c	Mar. 15, 29	14,100	51	51½	48½	51	— ⅞
32⅜	19⅜	25⅞	21⅜	$6,363,350	12.50	National Transit Co	‡25cQ	Mar. 15, 29	1,000	23⅞	24¼	23¼	24¼	+ ½
75	38½	85	72	5,000,000	100	New York Transit	.....	July 15, 26	100	83	83	83	83	— 2
69	56½	63	54	2,000,000	50	Northern Pipe Line	$2S.A.	Jan. 2, 29	100	58	58	58	58	— 1
83½	58½	74⅜	64⅛	60,000,000	25	Ohio Oil Co	50cQ	Mar. 15, 29	4,300	68	70⅜	67½	69⅞	+ 2⅜
84	28	44½	28	10,000,000	25	Penn Mex. Fuel	75c	Dec. 16, 28	400	29¾	29¾	†28	28	— 1⅞
220	167	50	40	4,000,000	25	Solar Refining	$5S.A.	Dec. 20, 28	.....	.....	.....	.....	.....	.....
19	12	22½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	400	20¼	20¼	20¼	20¼	+ 1/8
71⅞	36¾	60¼	40⅛	30,000,000	25	South Penn Oil	50cQ	Mar. 31, 29	5,200	54⅞	54⅞	52½	54	— 1⅛
102	70	70	62¾	1,750,000	50	South West Pa. Pipe Lines	$1	Apr. 1, 29	.....	.....	.....	.....	.....	.....
95⅞	70⅞	103¼	55⅝	348,175.069	25	S. O. Indiana	‡62½cQ	Mar. 15, 29	25,200	56⅝	56⅞	†55⅝	56½	— ¼
27¾	15	21⅞	18	8,000,000	25	S. O. Kansas	.....	June 16, 24	1,300	19	19	18⅝	18⅝	— ½
49	44	45¼	36⅛	25,654,516	10	S. O. Kentucky new	40cQ	Mar. 31, 29	6,300	37⅝	37⅞	†36⅛	37	— ¾
54⅝	39⅞	50¼	45½	4,649,225	25	S. O. Nebraska	‡62cQ	Mar. 20, 29	100	48⅞	48⅞	48⅞	48⅞	+ ¾
134	71	129	110¼	14,000,000	25	S. O. Ohio	62½cQ	Apr. 1, 29	600	123	125¼	121¼	121½	— 5¼
125	116	124½	116	7,000,000	100	do pfd	$1.75Q	June 1, 29	20	115¼	117¾	115¼	117¾	+ 1¼
23½	16	18	14	861,466	25	Swan Finch Co	30c	Jan. 15, 29	100	14	14	†14	14	— 1
111	72	133¾	105½	126,154,000	25	Vacuum Oil	$1Q	Mar. 20, 29	3,700	122½	122½	118⅛	120	— 2⅛

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Week Ended May 25 Sales	First	High	Low	Last	Change
1½	.53	.72	.375	$ 5	Amer. Cons. Oilfields	.....	.....	.....	.....	.....	.....
9½	3⅛	8⅝	4½	N.P.	Amer. Maracaibo	5,500	4½	4¾	4⅜	4⅜	— 1/8
4½	2¼	5	1⅞	$10	Argo Oil	3,900	3	3	2⅜	2¾	— ¼
3¾	3⅜	8½	3¾	10	Arkansas Nat. Gas	94,800	7¾	8	7⅞	8	+ ¼
55	32¾	62	50	N.P.	British American Oil	.....	.....	.....	.....	.....	.....
23⅞	3¾	4⅞	2⅝	25c	Carib Syndicate	6,600	4½	4½	3⅝	3⅝	— ⅞
90⅞	54	121⅞	88⅜	$25	Cities Service	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	do new	233,600	28¾	29½	28⅛	29½	+ ¾
103½	94½	98½	88⅜	100	do pfd	2,500	96⅛	98½	98	98½	+ ⅛
9⅝	8⅞	9¼	8⅞	10	do pref. B	300	9	9	9	9	0
97	88½	96	92½	100	do pref. BB	800	96	*96	94	94	— 2
35¼	27⅜	....	....	10	do Bankers	100	56¼	56¼	56¼	56¼	0
2¼	1	1½	1	1	Colombia Syndicate	100	1⅛	1⅛	1	1	0
17¾	9¾	15	8¼	....	Colon Oil	400	9¼	9¼	9	9	— ¼
8⅞	6¼	11⅜	6¾	10	Consolidated Royal	800	6¾	7	†6¾	6¾	— ¼
3¼	.76	2½	1⅛	N.P.	Crown Central	1,400	1¾	1⅞	1⅝	1⅝	— 1/8
15	6¾	11¾	8	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
50	48	51⅛	51⅛	$100	do pfd	.....	.....	.....	.....	.....	.....
33½	8⅛	26	15	N.P.	Darby Petroleum	4,100	15½	15¾	15	15¼	+ ¼
13½	7⅞	....	....	....	do trust ctfs.	.....	.....	.....	.....	.....	.....
2⅞	1	9⅝	2	N.P.	Derby Oil & Refining	18,400	6⅜	9⅜	6⅜	7⅜	+ 1⅛
21⅜	7½	....	....	N.P.	do pfd	11,800	31½	37¾	31½	37¾	+ 7¼
2	1	....	....	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
.53	.15	....	....	N.P.	Gilliland ctfs.	.....	.....	.....	.....	.....	.....
165	101⅛	189	142⅛	$25	Gulf Oil Corp	19,600	186⅞	186⅞	170⅛	171⅜	—13½
7½	5⅜	7½	4½	5	Homaokla Oil	5,800	5	5	4½	4½	— ½
3⅜	1	2⅞	1¼	10	Intercontinetal Pet	50,900	2⅞	2⅞	2	2⅜	— ½
3	¼	3⅝	1½	N.P.	Kirby Petroleum	2,200	1⅞	2⅛	1¾	2	+ ¼
9⅜	5⅛	6⅛	5	N.P.	Leonard Oil & Dev	4,600	5	5	3½	4½	— ½
43⅜	20	38⅞	24¾	N.P.	Lion Oil & Refg	2,400	35¾	35¾	32½	34⅜	— ½
69⅛	48⅛	80	67	$25	Lone Star Gas	5,600	74½	*80	74½	80	+ 5½
1⅞	.50	1¼	.50	1	Magdalena Syndicate	7,700	½	½	½	½	0
48½	32	38½	21¾	N.P.	Margay Oil	400	....	21½	†21½	21½	— 3½
40½	40½	....	....	$10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
8	2¾	6⅜	3⅝	N.P.	Mexico-Ohio Oil	.....	.....	.....	.....	.....	.....
.74	.20	....	....	$10	Mexico Oil	.....	.....	.....	.....	.....	.....
1¾	.76	1½	1	1	Mountain & Gulf	800	1	1⅛	1	1	— 1/8
28⅞	19½	22⅞	16⅜	10	Mountain Producers	3,400	17½	17½	†16⅜	16⅞	— ¾
5⅝	4¼	5	3⅞	5	New Bradford	200	4	4⅛	4	4	— 1/8
5½	3	3½	3	10	New England Fuel	.....	.....	.....	.....	.....	.....
11⅞	7⅛	9⅜	6¼	1	New Mex. & Ariz	1,400	6¼	6¼	6	6	— ⅜
15½	11½	....	....	25	New York Petrol	1,300	18⅝	19⅜	18¼	19⅜	— ¼
40	39⅛	....	....	....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
13¼	8⅛	11⅝	8¾	N.P.	North Cent. Texas	100	11	11	11	11	— ¼
....	....	19¼	14⅜	N.P.	Oil Stock, Ltd. A	1,300	17½	17½	16	16⅜	— 1
....	....	17⅞	15	N.P.	do B	200	16½	16½	16½	16½	0
26¼	20	23¼	17	N.P.	Pacific Western Oil	1,200	18⅛	18⅜	16¼	16⅞	— 1¾
6	2¼	3½	2	N.P.	Pandem	6,900	2⅛	2½	2	2¼	0
15⅝	8½	10¼	6⅛	N.P.	Pantapec	1,800	7	7	6¾	6¾	— ¼
20	10⅝	....	....	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
.09	.04	....	....	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
7¾	4⅞	7⅜	4⅜	$10	Pennok Oil	.....	.....	.....	.....	.....	.....
.....	.....	34½	27¼	N.P.	Petroleum Corp	300	27⅞	28¾	27½	28⅝	— ⅛
5⅜	3⅛	.....	.....	$5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
31⅜	26½	30	23	N.P.	Plymouth Oil	1,300	24	24	23½	24	0
18	8	16	11½	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
13	4⅛	8⅛	5	N.P.	Reiter-Foster	1,500	7	8⅛	5⅛	5¾	— 1¼
31½	23¼	25½	24⅛	$25	Richfield pfd	.....	.....	.....	.....	.....	.....
.....	.....	29	23½	....	Root Refining pfd	400	26	26	25½	25½	— 1
12	4⅜	11	6⅜	N.P.	Ryan Consolidated	400	7⅞	7⅞	7	7	0
7¼	5½	5⅞	3⅛	$10	Salt Creek Cons	400	3½	3½	3¼	3½	0
35	23¼	25⅞	18	10	Salt Creek Prod	2,000	19⅜	19⅜	†18	18⅜	—18¾
3½	1	2¼	1⅜	5	Savoy Oil	.....	.....	.....	.....	.....	.....
40	27	33⅛	32	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
.....	.....	23	16⅝	N.P.	Texon Oil & Land	1,200	20	20	18⅝	18⅞	— 1½
22⅞	13	16⅞	11⅝	$10	Tidal Osage	.....	.....	.....	.....	.....	.....
21¼	13⅛	16½	10⅜	10	do not-voting	.....	.....	.....	.....	.....	.....
93¾	75	90	80	100	Transcontinental pfd.	3,300	110½	125	98	99	— 8
74⅛	18	70	66	10	Venezuela-Mexico	200	67¾	*70	67¾	70	+ 1
9⅛	4¾	6½	3⅝	5	Venezuelan Petrol	9,100	4⅜	4½	†3⅝	4	— ½
8¼	4⅞	9⅛	5⅛	1	Woodley Petroleum	2,400	5¾	5⅞	†5⅛	5½	— ¼
⅜	⅛	5⅜	2⅛	25	Y Oil & Gas	400	2⅛	2½	†2⅛	2⅛	— ½

*New High †New Low

New York Curb Bonds

Week Ending May 24

	High	Low	Last	Change
Cities Serv. 5s '66	88½	87⅝	88¼	—2¼
Cities Serv. G 5½s '42	90½	89½	90	— ½
Cities Serv. G.P. 6s '43	95	94¾	94¾	— ¾
Cont. Oil 5¼s '37	94¼	93	93	—1¼
Empire O & R 5½s '42	90¼	89¼	90	— ¼
Gulf Oil 5s '37	99¾	99½	97½	— ½
Gulf Oil 5s '47	100	99½	99¾	0
Indep. Oil 6s '39	116¾	113⅛	114	—2½
Richfield Oil 5½s '31	101	100	100	— ¾
Sun Oil 5½s '39	100½	100	100¼	+ ½
Valvoline Oil 7s '37	105	104½	104½	0

Oil Dividends

	Amount	Payable	Stock of Record
Anglo-Amer. final 1928	7½%	June 5	.....
North Cent. Texas pfd	$1.62½	July 1	June 10
Phillips Pet. q	37½c	July 1	June 14
Solar Refg. s. a. new	$1.25	June 20	May 31
do s.a. old	$5	June 20	May 31
S. O. Ohio q	62½c	July 1	June 7
The Texas Corp. q	75c	July 1	June 7

New York Bonds

Week Ending May 24

	High	Low	Last	Change
Assoc. Oil gold 6s	100½	100	100½	— ½
Atlantic Refg. deb. 5s	101	100¼	100⅜	+ ⅜
Cal. Pet. 5s	97½	96½	97½	—1¾
Cal. Pet. 5½s	100½	99	99	—1
General Asphalt 6s	106¾	105	105	—1
General Pet. 5s	99¾	99⅜	99¾	— ⅜
Humble Oil & Refg. 5s	100⅛	100	100	0
Humble Oil & Refg. 5½s	101⅜	100¾	100⅞	— ⅛
Pan Amer. P & T 7s	104½	104½	104½	0
Pan Amer. P. & T. 6s	108½	106½	108	— ½
Pan Amer. P. & T. 6s	97⅛	95¾	95¾	—1¼
Phillips Pet. 5½s	90½	89½	90⅛	— ⅞
Pierce Oil deb. 8s	105⅝	105⅝	105⅝	+ ⅛
Pure Oil 5½s	99	98	98½	+ ¼
Shell Union Oil 5s	96⅞	95	95	— ¾
Sinclair Con. Oil 7s	102¼	101½	101½	—1
Sinclair Con. Oil 6½s	99½	98⅞	99	+ ⅜
Sinclair Con. Oil 6s D	98⅞	98½	98½	— ⅜
Sinclair Con. Oil Crude 5½s	95½	94¾	95	— ½
Sinclair Pipeline	94	93¾	94	+ ¼
Skelly Oil 5½s	93½	93¼	93¼	— ½
S. O. N. Y. 4½s	96¾	95¼	95¼	—1¼
S. O. N. J. 5½s	102	100½	101	— ¼
Union Oil of Calif. 6s A	105	105	105	0
Union Oil of Calif. 5s C	99¾	97	97	— ¼
White Eagle Oil 5½s	101	100	100	0

THE OIL INDUSTRY EXCHANGE

Positions Wanted

EXPERIENCED SALESMAN, 30, single, desires new connection in East. Willing to travel. Address "Salesman," Room 1124, 342 Madison Ave., New York City.

PETROLEUM CHEMIST—over 12 years practical refining experience, desires to make change. Age thirty-nine, married. Capable of assuming full charge of Laboratory including research or as Assistant Superintendent. Address Box 348.

LUBRICATING ENGINEER—SALES MANAGER—Six years experience in U. S., twelve years experience abroad, wants responsible position. Knows manufacturing, application, marketing. Successful copy writer and journalist. Oils—Greases—Specialties. Available at once or later. Address Box 349.

SALES OR GENERAL MANAGER—Executive open for immediate connection capable of handling National or local distribution gasoline, oils, or allied lines, through brokers, jobbers or direct. Fifteen years experience Chicago, Cleveland, Minneapolis Northwest. Good personality, dynamic energy, thoroughly familiar with refinery methods and a record with references most satisfactory. Address Box 350.

SALESMAN

with executive ability, desires new connection. Experience includes bulk and service station management, training salesmen, installation of equipment. 34 years old and married. References of highest order. Available about June 15th.

Address Box 345

Situations Open

SUPERINTENDENT WANTED

for Oklahoma Refinery. Must have experience in Pipe Still—Dubbs Cracking—and Continuous Treating operation of West Texas Crudes.

State training, past and present connections and salary required.

Address Box 335

DRAFTSMEN WANTED. Prefer men with oil refinery or similar experience. Give full details of personal history, experience, salary desired, etc. Address P. O. Box 788, Wood River, Illinois.

ENGINEER WANTED

Qualified by training and experience to handle design and engineering of complete petroleum refining plants. Position now open with old established equipment builders. Reply should give complete information of training and experience and salary.

Address Box 333

EXPERIENCED CHEMISTS

2 to 5 years refinery operating experience also chemist 1 year analytical experience. State age, training, detailed experience, references, salary expected, also small photo.

Shell Petroleum Corp., East Chicago, Ind.

Business Opportunities

PARTNER WANTED: Manager with $5,000 or more (will put in equal amount in cash) to own and operate one of the best automobile oil and gasoline businesses in Illinois. Address care National Petroleum News, Box 346.

INDEPENDENT SERVICE STATION OPERATOR NEEDS $25,000 FOR EXPANSION. Have brick storage and station. Plan to establish four smaller stations in nearby Towns. Agricultural section of Mississippi. Highway 61.

Will purchase gasoline and oils from individuals advancing money and in addition secure loan with first mortgage of $35,000 improved real estate now owned and also on all other property acquired during life of mortgage.

Address Box 347

Patents

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Miscellaneous

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"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

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"Position Wanted"—5 cents a word. Minimum charge $1.00.

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Copy must reach us not later than Friday preceding date of issue.

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Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 West 3rd Street, Cleveland, Ohio, unless otherwise specified.

For Sale

SEVEN PRATT NO. 6 SAFETY NON-REFILLABLE CAN FILLERS for sale. First class condition and suitable for filling one gallon packages kerosene and light lubricating oil. Bargain. Address Box 337.

FOR SALE VERY REASONABLY: Four bulk storages, located in Illinois and Missouri, and approximately fifty filling stations and curb pumps. Will do 250,000 gallon gasoline, 35,000 gallon kerosene, and eight to ten thousand gallons motor oil monthly this summer. Business increased 36% last year. Will guarantee to hold all present business for any company we sell to.

BOX 344

NEW AND MODERN BULK STATION AND ONE FILLING STATION FOR SALE, ideally located. For terms and complete description of location, address N. J. Schubert, 1020 So. 15th St., Manitowoc, Wis.

FOR SALE—5 second-hand Bowser 10-gallon visible, hand-operated, positive-stop, dry hose pumps. Three Fleckenstein 10-gallon hand-operated, positive stop, dry hose, single bowl pumps. Two Fry 10-gallon, visible, hand operated, wet hose pumps. One Milwaukee 10-gallon, visible, hand operated, positive stop, dry hose pump. Price $35 each. These pumps have all been in operation and are in good condition. One 1200-gallon tank, 4-compartment. Price $250. One Fry Flusher, brand new, never been used, cost $75. Price $40. One Sharpsville 12-foot pit, in use less than a year. Price $75. Two Romart Air Towers, style SH-A. Price $15 each. Address Valley City Oil Company—Grand Rapids, Michigan.

Wanted to Buy

ONE 300-GALLON 3-COMPARTMENT FORD TRUCK TANK wanted, must be in good condition. Steel bucket box and can rack. I have for sale used Fry pump Model 17. C. S. Price, Mt. Union, Pa.

BARGE WANTED

200,000 gallons capacity. Must be in good condition. State complete details and price.

Address Box 343

Somebody Can Use Your Outgrown Equipment

Tell them all about it through the Oil Industry Exchange. The cost is small. See rates at bottom of page.

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